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ABSTRACT

This publication is one of two related volumes that were produced as part of an interdisciplinary effort at the University of Pennsylvania by the School of Social Work and the Wharton School to develop a joint educational program in social welfare management. This particular volume contains the syllabi and course outlines of six proposed classes in social welfare management intended to be conducted jointly by schools of social work and business management. Topics of the proposed courses include management of conflict and change, collective bargaining, planning and operations management, quantitative methods, information systems, and management of professionals. (JG)

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National Project On
Education for Management

Volume II

Syllabi and course
outlines of some
suggested courses *
to be undertaken by
Schools of Social Work
and Business

EA 008 428

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direction of the
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University of Pennsylvania

Spring 1975

Table of Contents

Introductions Page

Dr. Louise P. Shoemaker
Dean, School of Social Work

Dr. Donald C. Carroll
Dean, The Wharton School

Managerial Influence and Leadership 1

Managing Organizational Conflict 23

Managing Organizational Change 40

Dr. Ross A. Webber

Collective Bargaining 70

Dr. Edward B. Shils

Planning and Control 87

Productivity, Operations Management, and Entrepreneurship 120

Dr. George M. Parks

Quantitative Methods 146

Dr. Robert C. Jones

Information Systems 158

Dr. S. Christopher Mader

Management of Professionals 169

Dr. Francis W. Wolek

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May 21, 1975

The Training Project in Social Welfare Administration has served to infuse the curriculum of the School of Social Work with this important element for professional practice. As a result of the project, during this academic year concurrent with the project's activities; a group of faculty have worked steadily on designing new courses and re-designing ones being given in light of the work - the concepts, materials, and areas of knowledge - generated by the project.

The faculty of the school is presently planning for the next academic year; under consideration is the recommendation that all students in the masters program would be required to select a course in the area of administration-management.

The cooperative aspect of the project, both with the Wharton School and the agencies, national organizations, and individual academicians involved, has been an encouraging and productive part of the project. We look forward to continuing cooperative work to develop further the educational components of the project.

Louise P. Shoemaker

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May 30, 1975

The participation of a School of Social Work with a School of Management in a joint program is an innovative departure. What is also impressive is that this program, undertaken with a grant from the Department of Health, Education and Welfare, has already been implemented to such a laudable degree. As a result of this experience, new avenues of approach between the faculties and the student bodies at the graduate levels are now being explored and put into effect.

The concern of the entire community must be with the content and management of social welfare programs. We need to provide effective and meaningful programs, which are planned and implemented and have a high cost-benefit return. Joint programs such as those underway at the University of Pennsylvania in graduate training and continuing education will provide a basis for better management of the social service programs.

The Wharton Entrepreneurial Center is involved in innovative approaches to the management of the private and non-profit sectors. Entrepreneurship is synonymous with productivity - a concern which all of us have. Productivity is being researched and acted upon in a positive fashion in this project. The University of Pennsylvania is concerned with developing new approaches on an interdisciplinary basis. What we have is the first tangible step toward an educational achievement.

DCCarroll
Donald C. Carroll
Dean

PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN MANAGEMENT OF CONFLICT AND CHANGE

MANAGERIAL INFLUENCE & LEADERSHIP

MANAGING ORGANIZATIONAL CONFLICT

MANAGING ORGANIZATIONAL CHANGE

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Managerial Influence and Leadership

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The Wharton School
University of Pennsylvania

A. A General Mode of Influence

B. The Bases of Power

1. coercive
2. reward
3. legitimate
4. referent
5. expert

C. Influence as Appeal to Needs

1. fear
2. tradition
3. blind faith
4. rational faith
5. joint determination

D. The Debate About Leadership Style

E. Research on Leadership, Morale and Performance

F. A Two-Dimensional Approach to Leadership

1. task - pressure - initiating structure dimension
2. people - representativeness - concern dimension

G. Situational Leadership

1. task and leadership
2. contingency theory of leadership

H. References

I. Suggested Cases

Educational Objectives for Managerial Influence and Leadership

(1) understanding of influence as a central managerial activity

(2) understanding of the multiple forms of power and influence

(3) recognition that the follower makes certain judgements in deciding whether or not to follow

(4) sensitivity to the interdependency of leader and follower

(5) understanding of the appeals for authoritarian or participative styles

(6) familiarity with the research on the relation between morale and performance

(7) recognition that high morale doesn't guarantee good performance

(8) understanding that a manager can simultaneously exhibit both pressure for performance and concern for people

(9) sensitivity to the fact that a manager must take into account his subordinates' expectations

(10) recognition that one of the strongest determinants of managerial style is the task being performed

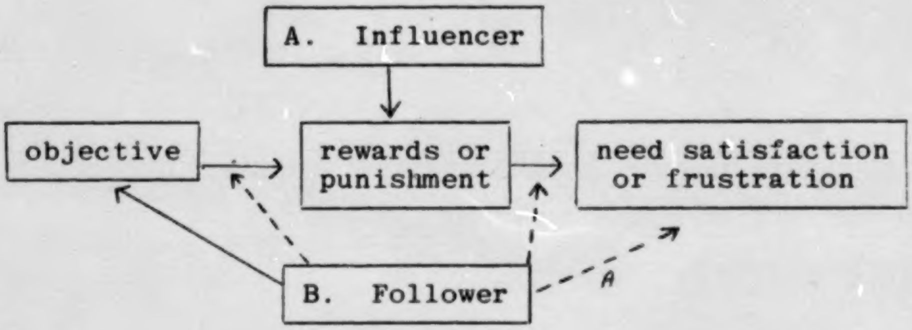
(11) recognition that certain tasks are suited to authoritarian leadership and others to participative styles

(12) understanding of the contingency theory of leadership: the fit between task, power, climate and style

These objectives are particularly appropriate to the education of prospective social work administrators who may tend to overemphasize human dimensions of management at the expense of task performance.

A. A General Model of Influence

A variety of influence processes can work if logically and consistently applied. Nonetheless, it is not certain that any will work in a particular situation with specific people. We are dealing with odds, not certainty. Thus, whether an influence process will motivate a person to behave in the desired way depends on the individual's perception and judgement whether effort will lead to the reward offered (or lack of punishment promised) and whether this reward will satisfy a fundamental need.



On the job, a subordinate is likely to work hard if the path from his effort to his goals is clear - if he thinks that he can meet his superior's desired productivity and if he is quite certain that the money, promotion or other rewards offered will be granted and that they will satisfy some needs such as security or esteem. But, if job security is viewed as unrelated to one's productivity (because it depends upon seniority and/or economic conditions), the subordinate is not likely to work above the minimum level necessary to keep his job. He may even believe that higher productivity will lessen his security. Or if the subordinate's really important needs are for competance and achievement, he is unlikely to put forth much effort in a routine job if all his superior offers for high productivity is money. Finally, if B distrusts A's promise of rewards or doesn't believe his threats, the influencer has no influence.

This general influence model clearly defines the central leadership problem: to formulate, communicate and ensure that the followers understand the path-goal relationships. The followers must understand the goals, the criteria for evaluating performance, the sanctions promised and their meaning for them. The leader must design the system so that goal achievement leads to the followers' personal rewards and need satisfactions. If he doesn't, he will be no leader, no influence will result, and no followers will exist.

B. The Bases of Power

When someone successfully influences another, we infer that the influencer possesses power. Thus, influence implies power and power is necessary for influence, but power is not just the brute force of coercing the reluctant followers. It takes several forms.

- Coercive power is based on a follower's perception that the influencer has the ability to punish him - and that the punishment will be unpleasant or frustrating of some need. Fear as an influence process rests upon such power.

* Reward power is based on a follower's perception that the influencer has the capacity to reward him and that the reward will be pleasant or satisfying of some need. Reward power is the positive side of the fear process as well as part of influence based on tradition.

* Legitimate power is based upon the follower's internalized values which convince him that the influencer has a legitimate right to influence which he is bound to accept. This is at the core of a traditional influence system where leadership positions are endowed with formal authority.

* Referent power is based on the follower's desire to identify with the charismatic leader whom he follows out of blind faith. The identification can be maintained if he behaves as the leader tells him to.

* Expert power is based on the follower's perception that the leader has special knowledge or expertise which can be useful in satisfying some follower need. Responding on the basis of rational agreement and rational faith reflect this power.

These power bases underly the various forms of influence through appeal to the followers' needs.

C. Influence as Appeal to Needs

Roughly paralleling the human need hierarchy is a continuum of influence processes including six fundamental reasons why people respond: fear, tradition, blind faith, rational faith, rational agreement and joint determination.

Influence Processes and Leadership Styles

Follower's Need Hierarchy	Influence Process	Leadership Style	Leader is Power Base
competence, achievement		abdication	
power, autonomy	joint determination	participation	
	rational agreement		
esteem, prestige	rational faith	persuasive	expert
	blind faith		referent
social affiliation			legitimate
			reward
safety, security	tradition	authoritarian	coercive
physiological	fear	autocratic	

D. The Debate About Leadership Style

Arguments for Authoritarian Appeal to Lower Needs	Arguments for Participative Appeal to Higher Needs
1. Authoritarian is the most predictable and effective style because everyone has physiological, safety and security needs that most can satisfy only through money earned from a job.	1. All people may possess lower needs, but they are not necessarily dependent on any one job to satisfy them. They may have skills that are in such demand that they have alternatives available, some of which may satisfy both lower and higher needs. Increasingly, mobile employees will move to these jobs.
2. Much work is unpleasant and many people are lazy. More or less, these conditions will always prevail and authoritarian leadership is essential. Otherwise, most people will do as little as possible.	2. Most people are not inherently lazy. The expenditure of physical and mental effort in work is as natural as play or rest. We are energetic and excited by challenging and satisfying tasks. Frustrating work can be modified to release talent and drive; the job can be a vehicle for satisfying competence and acheivement needs.
3. Authoritarian leadership is efficient because it is speedy; the superior simply tells the subordinate what to do [illegible] time is wasted in discussion. Too much concern fo[illegible]ployees will only cripple managers rendering them incapable of making the tough decisions.	3. Non-directive leadership can lead to more creative and effective performance because people invest more of themselves in the task. They will exercise self-direction and self-control in the service to which they are committed. When people participate in defining organizational objectiv and the evaluation system by which their performance is evaluated, they understand and are more committed.
4. Authoritarian leadership is easier for most managers. They don't have to , analyzing the various needs of their subordinates because they assume a simple model of human nature, that people have low-level needs and they must keep their jobs to satisfy them. This assumption of subordinate uniformity of physiological and security needs makes this style especially effective for a large number of people. In addition, most manager's personalities are better suited to being "mature autocrats" than democratic leaders.	4. An increasing general educational level means that more and more people understand human complexities and desires for satisfaction of higher level needs. The average manager and worker possesses more education than in the days when authoritarian leadership styles were developed. They are simply obsolete. As a result, many, many people are underutilized.

5. Authoritarian leadership is honest and straightforward: (a) the superior defines the desired behavior, (b) states the rewards and punishments, (c) judges the subordinate's performance and dispenses the sanction, (d) the superior doesn't meddle with subordinates' personality, analyze their motives or judge their lives. This frank approach is attractive to many who distrust the indirection of other leadership styles.	5. Participative leadership is more honest because the superior respects his subordinates and communicates more fully about what each expects of the other. 3-2
6. Most subordinates expect superiors to be authoritarian. - That is the way they have been raised and educated. A superior's departure from this expectation may be interpreted as weakness leading to subordinates walking all over him.	6. Subordinates increasingly want to influence the terms of this relationship. Children are not so automatically obedient because child-rearing and educational patterns have changed to encourage increased participation, more responsibility, independence and self-control.

Note that both sides in this debate accept the ultimate aim of the organization: effective and efficient performance. They differ on the means to achieve it. The authoritarians believe that strong management control and appeal to low-level needs is more effective. The non-directives believe that appeal to higher needs will draw more from people.

This philosophical debate is interesting, but inconclusive. Both sides seem right depending on one's mood. To test the arguments required empirical research and much of this has been conducted over the past 30 years.

E. Research on Leadership, Morale and Performance

The argument for participative leadership suggests that:

managerial leadership style	affects ---------------	subordinate morale	affects ------------	subordinate and organizational performance

Non-directive leadership and greater subordinate participation supposedly lead to higher morale, greater personal investment in the organization and more effective performance. This has been tested in several ways.

In general:

* Participative leadership style (especially superior's consultation of subordinates and expressed confidence in them) tends to be associated with high morale.

* High morale is associated with less turnover, less unexcused absenteeism (and fewer accidents).

* But, there is no consistent and reliable association between morale and productivity; higher job satisfaction does not directly lead to better performance.

* Hence, no consistent relationship exists between leadership style and performance. Neither authoritarian nor participative influence appears generally superior to the other.

Morale is simply not a good predictor of performance. A manager's efforts to obtain high subordinate morale doesn't mean that they work any harder or produce any more. In fact, some researchers suggest that morale doesn't precede performance, but follows it. That is, good performance leads to high morale if management rewards the performance:

good performance ---- management rewards ---- employee morale

Put another way: (1) job satisfaction depends on rewards, (2) rewards depend on performance, (3) so satisfaction depends on performance.

F. A Two Dimensional Approach to Leadership

The simple distinction between ends of the needs-influence-leadership continuum is too simple Leadership is not just being either hard or soft. Effective leadership may require a manager to be both. For example, we can distinguish between two facets of management:

(1) Initiating structure or pressure for performance: the degree to which the leader initiates psychological structure for followers by assigning particular tasks, specifying procedures, clarifying his expectations and scheduling work to be done.

(2) Consideration and representativeness: the degree to which the leader creates a supportive environment of psychological support, warmth and helpfulness by being friendly and approachable, looking out for his subordinates' welfare, going to bat for them and representing their interests upward.

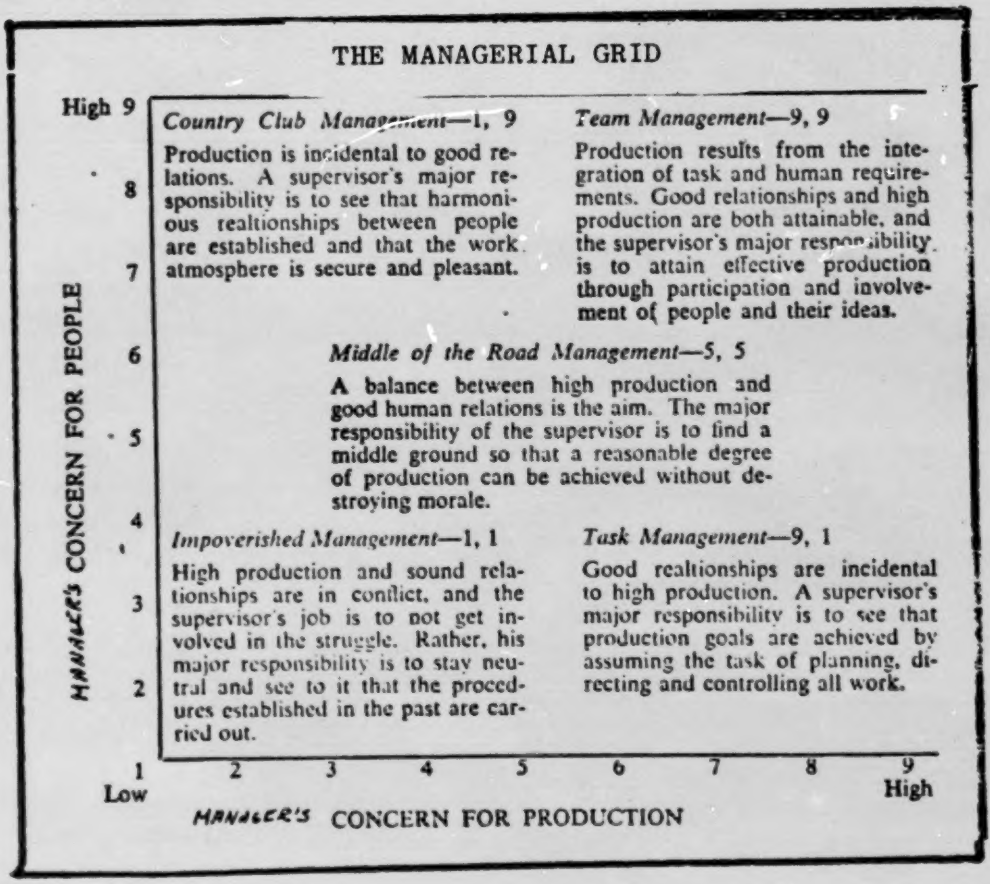
Either one of these in the absence of the other tends to be associated with poorer performance, but in positive combination, they are highly effective. In short, with relatively low-level employees:

* low managerial pressure for performance plus low representativeness	lower subordinate performance
* high managerial pressure for performance plus low representativeness	lower subordinate performance
* low managerial pressure for performance plus high representativeness	lower subordinate performance

But . . .

* high pressure for performance plus high representativeness	higher subordinate performance

These research findings have led to a change of thinking among many managers: that one can be both hard and soft, simultaneously task-oriented and people-concerned. A popular utilization of this concept has been to describe managers on a two-dimensional grid of task and people orientations rated on a scale of 1 to 9. Thus, a 1-1 manager is a nothing; he is abdicative; a 1-9 is a country club type, only concerned about people and morale, not about performance; a 9-1 is a task dominated slave driver and autocrat. The desired paragon of virtue is the 9-9 manager greatly concerned with both people and task.



THE MANAGERIAL GRID

Country Club Management—1, 9

Production is incidental to good relations. A supervisor's major responsibility is to see that harmonious realtionships between people are established and that the work atmosphere is secure and pleasant.

Team Management—9, 9

Production results from the integration of task and human requirements. Good relationships and high production are both attainable, and the supervisor's major responsibility is to attain effective production through participation and involvement of people and their ideas.

Middle of the Road Management—5, 5

A balance between high production and good human relations is the aim. The major responsibility of the supervisor is to find a middle ground so that a reasonable degree of production can be achieved without destroying morale.

Impoverished Management—1, 1

High production and sound relationships are in conflict, and the supervisor's job is to not get involved in the struggle. Rather, his major responsibility is to stay neutral and see to it that the procedures established in the past are carried out.

Task Management—9, 1

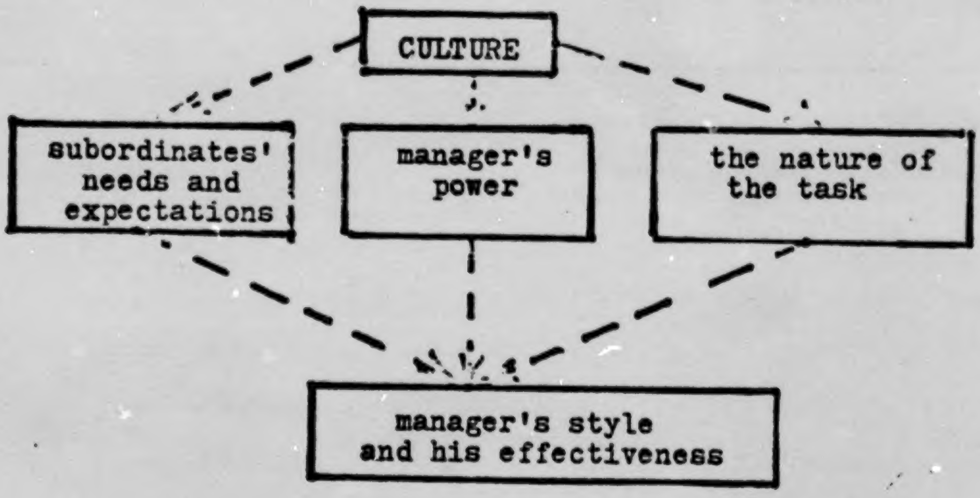
Good realtionships are incidental to high production. A supervisor's major responsibility is to see that production goals are achieved by assuming the task of planning, directing and controlling all work.

High 9
8
7
6
5
4
3
2
MANAGER'S CONCERN FOR PEOPLE
1
Low
2
3
4
5
6
7
8
9
High
MANAGER'S CONCERN FOR PRODUCTION

The managerial grid is a promising concept and training programs have been instituted to encourage managers to move toward the 7-7, 8-8, 9-9 positions. Nonetheless, it is by no means established that most effective managers are nine-niners (and this is extremely doubtful) or indeed that it would be desirable for most managers to move in this direction.

H. Situational Leadership

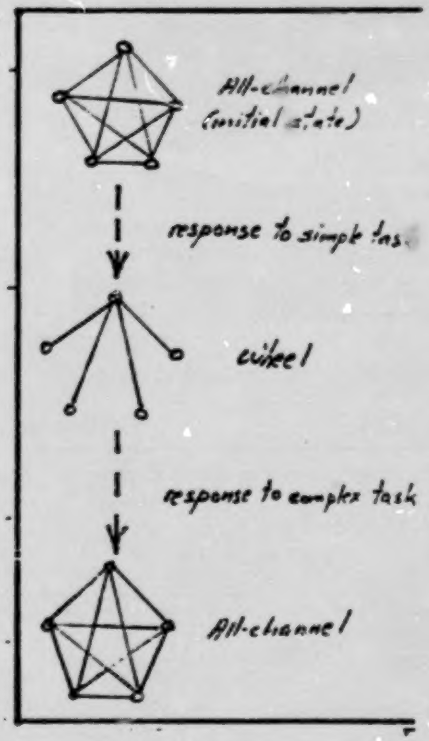
The "great man" (or woman) theory of leadership is attractive and popular, but systematic research has not discovered any ideal leader or manager personality. Successful managers come in all sizes and shapes and there are no consistent personality differences between those judged effective or ineffective. The point is that successful leadership depends less on the leader's personality than on the situation. In addition, there is no one "best" leadership style. It depends on the situation. What has evolved is a "contingency theory of leadership" which states that effective managerial style is continent upon the fit between the factors affecting leadership.


CULTURE
subordinates' needs and expectations
manager's power
the nature of the task
manager's style and his effectiveness

Task and Leadership

Of all the factors influencing managerial behavior, the nature of the task is strongest. More than anything else, task and technology affects how a manager leads his subordinates. We can see this most dramatically by first considering laboratory experiments.

In one experiment all-channel groups first worked in a sequence eight simple, routine problems and then a series of four very difficult problems involving inference. Most of the groups centralized (formed wheel networks) for the easier problems; speed increased, errors decreased, and the groups showed higher satisfaction. When the more difficult problem was given to the same groups, however, the heavy pressure on the central position led to quick decentralization (return to the all-channel net) by every group. In short, simple repetitive tasks tend to be solved by authoritarian means while more complex and ambiguous tasks are more likely to be handled by participative means.



Managers occupy a wide variety of positions each with its own particular demands and responsibilities. As a result, managerial posts differ as to the hours and behavior required and in the capacity of incumbents to control their own behavior. Analysis indicates significant differences in behavioral variability of managers in the different kinds of positions. They are arranged as follows:

More

Discretionary control over time

General Executives
Functional Control Managers
Sales Managers
Operating Supervisors

Service Managers

Less

For example, service managers occupy the most programmed managerial position - they demonstrate the least variability in behavior. The job's requirements are so explicit and demanding that relatively little discretion is left to the incumbent. Many requests, directives, and demands come to him. A typical situation: the service manager has a door, a phone, sometimes a teletype, perhaps even an old-fashioned pneumatic tube. A man walks in the door, the phone rings, a message is printed out. All want the service manager to provide something such as parts, repairs, tests, drawings, or trucks. To most of these communications, the service manager responds by categorizing the request and issuing it to a subordinate. This manager's job is primarily responding to others' demands, so the organizationally determined imperatives of his position are great.

In contrast, high-level general executives have great discretion in controlling their own behavior. Behavior varies more widely among these managers than for any other position. Demands are ambiguous, so incumbents vary widely in behavior.

Explicit short-range demands are relatively rare - for example, these men apparently make fewer decisions (although more important and more difficult) than service managers or operating supervisors.

Note that we do not imply that either participative or authoritarian leadership is better. Supportive style is indicated by more time responding to subordinates with advice and discussion, less time checking on their performance and issuing directives. Authoritarian leadership is associated with more directing and checking, less responding. Contrasting styles reflect positional demands and the autonomy allowed. Thus, general executives have the most discretionary control over behavior and they tend to be participative in encouraging others to contact them while refraining from directing. In contrast, operating supervisors and service managers have less discretion because job demands are explicit and constant; they are likely to be authoritarian. Thus, highly structured managerial positions with many explicit demands tend to manifest authoritarian leadership. The key variable is time: the time span required to obtain feedback on performance and the time span between performance reviews. The shorter these time spans, the more structured and the position and the less discretionary behavior.

Similar findings were found in a study of organization and leadership styles in four companies in two industries: container manufacturing plants and research and development laboratories.

Two pairs of organizations were compared: (a) a profitable, effective container manufacturer versus a less successful container company, (b) an innovative, prestigious, new product creating laboratory with a less successful laboratory. The results were as follows:

* The effective container manufacturer was characterized by centralized management decision making and basically authoritarian climate. Worker morale was apparently good; at least the working conditions and benefits were considered acceptable.

* The less successful container manufacturer was characterized by decentralized decision making and more participative climate. Morate was lower than in the more authoritarian, more effective plant.

* The effective Research and Development Laboratory was characterized by decentralized decision making and participatory climate. Researcher motivation and morale was generally high.

* The less successful Research and Development Lab was characterized by a manufacturing plant-like climate: centralized decision making and authoritarian control. Researcher morale and motivation was generally low.

Effective Leadership in Various Situations

Favorableness of Situation	Effective leader is	Situation	Leader-follower relations	Task	Position power
Favorable for Leader	Task-oriented, authoritarian	1	good	structured	high
		2	good	structured	low
		3	good	unstructured	high
	People-oriented, permissive, considerate	4	good	unstructured	low
		5	poor	structured	high
		6	poor	structured	low
	task oriented, authoritarian	7	poor	unstructured	high
Unfavorable for Leader		8	poor	unstructured	low

Evidence exists that the task oriented, authoritarian leader seems to work best when in very favorable and very unfavorable situations. Where the leader is liked and respected, possesses great formal power, and the task is simply structured, the situation (#1) is so favorable that response to the authoritarian style seems autocratic, quick and effective.

Where the leader is disliked, when he has little power and the task is ambiguous, the situation (#8) is so unfavorable that he seems to have no choice: only the task oriented manager seems to work. A more people oriented, participative manager will probably be just brushed aside by his "followers." This has been the case with unpopular managers supervising scientists and engineers in innovative industries. It also characterized the plight of some young U.S. Army infantry officers in Vietnam. Although they appeared to have power, actually many were so inexperienced and dependent on their subordinates in a very confusing battle situation that they were in danger of losing all influence.

In contrast, intermediate favorable-unfavorable situations tend to be best handled by a more people oriented, participative, permissive and considerate approach. Where the leader is liked, but his formal power is low and the task unstructured, involvement of followers is necessary. Many college Department Heads find themselves in this situation of intermediate favorableness/unfavorableness (situation #4).

This contingency model with its eight situational categories is by no means the definitive and final answer to understanding what leadership style is appropriate. New ideas will undoubtedly be advanced, but the model makes what will remain important points:

* Sometimes a manager can and must exercise task-oriented and authoritarian leadership regardless of his subordinates' desires and regardless of his own preference. At such times a manager must bite the bullet, make authoritative decisions, issue directives and ensure compliance.

* Sometimes a manager can and must exercise people-oriented and participative leadership regardless of his own preference. At such times, a manager must invite subordinate participation, join in their discussions, and ratify their decisions.

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I. Suggested Cases on Managerial Influence and Leadership

1. Cases from Intercollegiate Case Clearing House, Boston, Mass.

Audubon Shoe Mfg. Co.	ICH EH-A 101R
Battleship Y	ICH HP264
Blackman - Dodds	ICH 10H44, HP 591
S.S. Cowie	ICH 3 H 32, Eh-A 247
Dashman Company	ICH 1M 1356R
Walt Rogers	ICH

2. Cases in Ross A. Webber, Management - Basic Elements in Managing Organizations (R.D. Irwin 1975).

MANAGING ORGANIZATIONAL CONFLICT

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A. Evolving Attitudes Toward Conflict

B. Competition and Conflict Potential

C. Conflict Reinforcement

  1. misperceiving the other party
  2. misperceiving your own group
  3. personal attributes

D. Dominance

  1. individual
  2. coalition
  3. majority

E. Hierarchial Decision Making

  1. appeal to God or chance
  2. appeal to positional authority
  3. due process and right of appeal
  4. the ombudsman

F. System Restructuring

  1. rotating personnel
  2. decoupling with a buffer
  3. buffering with a linking role
  4. decoupling by duplication
  5. unifying the work force
  6. matrix organization

G. Bargaining

  1. distribution bargaining
  2. integrative bargaining
  3. mediating

H. Reference Topics

I. Suggested Cases

Educational Objectives - Managing Organizational Conflict

1. To be aware of changing attitudes toward conflict
2. To understand the conditions that increase the potential for interpersonal and intergroup conflict.
3. To be aware of the psychological processes that reinforce existing conflict.
4. To understand the major methods for managing conflict.
5. To be aware of the strengths and limitations of hierarchical conflict management.
6. To be aware of the advantages of handling conflict through system restructuring.
7. To be aware of the types of bargaining and the role of the mediator.

These objectives are particularly applicable to prospective social work administrators who tend to deny the presence or legitamacy of conflict - especially since the profession and administration of social work is increasingly infused with conflict.

A. Evolving Attitudes Toward Conflict

Re-examination of conflict has constituted a dramatic trend in the literature on organizations and management. Conflict is increasingly perceived as inevitable, often legitimate, and perhaps even desirable. It does not necessarily indicate organizational breakdown or management failure as implied in older management theory and human relations philosophy. Three different assumptions underlie recent thinking about conflict:

1. Conflicts are endemic in organizations because of a lack of concensus about position expectations and demands or because of lack of uniform commitment to organizational objectives.
2. Some types of conflicts are detrimental and others are beneficial for both individual and organizational objectives.
3. The principle of minimizing conflict subscribed to by some managers and social scientists may have some validity for crisis organizations such as armies or for routine organizations as some manufacturing companies, but may not be valid for knowledge and technology producing organizations such as those engaged in research and development.

Conflict and tension can be beneficial if they reflect a commitment that promotes challenge, heightened attention, and effort. The emerging thesis is that too little expressed conflict leads to stagnancy, but uncontrolled conflict threatens chaos. Since individuals and organizations have differing abilities to withstand stress, conflict should not be excessive. In short, it is not conflict itself that is dangerous but rather its mismanagement.

B. Competition and Conflict Potential

The study of conflict goes by many names in the literature: conflict, social resolution, social negotiations, collective bargaining. Underlying all of these approaches, however, is an emerging commonality: Social conflict results from the pursuit of what are perceived to be incompatible goals such that gains to one party occur at the expense of another.

The potential for conflict depends on how incompatible the goals are, the extent to which required resources are shared and the degree of interdependnece of task activities. Thus, the chances of conflict are small between people who have their own resources, perform entirely different tasks directed toward completely separate goals. Physics professors and cosmetics salesmen seldom conflict because their worlds are totally separate. The potential for conflict is much greater between those professors and university deans, or between the salesmen and company credit managers. These pairs draw on common resources, their tasks are interdependent, and they may pursue incompatible objectives (new experimental equipment versus control of university expenditures and expanded cosmetic sales versus reduced losses from customers' non-payment).

Conflict and competition share similarities, but with one essential difference. In both cases there is perceived incompatibility between goals; both can't win the war or the race. The success of one party comes at the expense of the other. In conflict, however, at least one side perceives an opportunity to interfere with the other's obtaining resources or performing activities. Competitors, in contrast, see their activities as quite independent with no opportunity to interfere with each other.

C. Conflict Reinforcement

Once conflict potential exists, certain perceptual, communicational, and personal distortions operate to maintain and escalate the conflict.

Misperceiving the other party

We tend to develop stereotypes that justify conflict. Each side exaggerates the differences that exist between them, a perception that requires only small actual differences to be maintained. This distortion is facilitated by reduced intergroup communication. If forced to interact, each side listens only to its own representatives. Indeed, in the absence of any shared goals, communication tends to reinforce stereotypes and relations deteriorate further. Unfortunately, one short-run result of forced busing for integration has been the strengthening of biases between blacks and whites rather than the desired growth of understanding.

Even in college student groups, the numerically dominant American white males tend to perceive white females as passive, non-leaders, black males as troublesome non-conformists and most foreigners as possessing lower aspirations. We tend to see what we expect to see. Furthermore, conflicting groups think they understand the other's position when they really don't.

Perceptual distortion thus exaggerates the differences between groups so that actual overlap is underestimated. For example, unreliable intelligence tests in the past have suggested that the mean intelligence for whites slightly exceeds that for blacks in the United States. We now think that this difference is phony because it reflects different verbal training, schooling, and cultures. Nonetheless, as bad and biased as the old I.Q. tests have been, the difference between blacks and whites was so narrow that perhpas one third of all blacks were superior to the average white. It is doubtful that the "average white" would have accepted this in the past or even today. He simply wouldn't believe that one third of all the blacks he saw could be smarter than he was. Similarly, a difference in sexual mores and behavior between middle-aged adults and today's youth may exist, but it is probably narrower than perceived, with great variation on each side and substantial overlap. A sizable proportion of older people demonstrate more promiscuity than exists among average youth. Nonetheless, peering across the gap, many exaggerate the differences.

Misperceiving Your Own Group

Stereotypes also extend to one's own group. When in conflict with others, in-group solidarity and cooperation increases and members tend to naively accept each other as honest, rational and peace-loving. Most even think their group is better than others. In some experiments, all groups rated themselves as better than average. A "superiority complex" seems to exist: regardless of what your group is really like, one can say, "poor though it may be, my group is at least above average!" We do not recognize the selective and self-protective distortion present. Those young people who distrust all authority figures and anyone over thirty sometimes fall prey to exploitation from their age and culture peers whom they naively perceive as being like themselves and hence good. All too common are horrible examples of rip-offs and physical abuse from unknowingly hitch-hiking, buying dope, and sharing pads.

Thus, competition and conflict heighten positive indentification with one's own group. People close ranks, they become more single-minded. Now they have a clear goal - to win. Even after objective performance measurement in experiments, groups tend toward more favorable subjective evaluation of their own performance and downgrading of others. To them, the numbers lie.

In general, we homogenize differences within the boundaries of our groups and exaggerate differences across boundaries. We also tend to reverse cause and effect. We say that the terrible characteristics of the other group justify our hostility and cause the conflict (e.g., the "gooks" are dirty, lazy and treacherous, hence we should either kill them or get out , or welfare chiselers are shiftless and promiscuous, therefore, they don't deserve help.). The social scientist sees the opposite causal direction: conflict leads to distorted perceptions in the interest of justifying hostility. Note that any differences may serve to stimulating hostility; the other side may be too dumb or too smart, too flexible (unprincipled) or too fixed (stubborn). It is difference that counts.

Personal Differences

Intergroup conflict occurs even between the most reasonable and secure people, but it can be exacerbated by personal attributes. Differences in background, education, age and culture lowers the probability of collaboration because of their adverse impact on values, knowledge and communication. This is even more likely if one party is clearly superior in position, pay, or seniority.

Some people seem more predisposed toward conflict. Just who is, is unclear and the whole question is distorted by old wives' tales and equally old prejudices. Hard evidence is rare. Nonetheless, it appears that certain personality attributes increase conflict behavior. These include low self-esteem, high dogmatism and authoritarianism, People who think little of themselves and who fear ambiguity in status, beliefs or authority seem more likely to seek supremacy and clairty by vanquishing their real or imaginary enemies. In addition, some evidence suggests that trusting people are more likely to be belligerent toward those perceived as violating their trust. In comparison with managers in several other nations, Americans exhibit the most trust toward those who appear friendly, but are the most belligerent toward provocative people. More suspicious and cynical Greek and Spanish managers, however, don't expect as much from others, but tend to be more conciliatory toward unfriendly, quarrelsome, and hostile people.

Even with the United States, differences seem to exist between managers in different functions: engineering and production more trusting and more belligerent; finance, accounting, marketing and sales less trusting and less belligerent.

All of this suggests that greater behavioral flexibility is likely to decrease conflict while people with narrower values, beliefs and behavioral skills increase it. Locked in their inappropriate styles, they are unable to compromise or collaborate. Total victory or complete withdrawal become the only permissible alternatives to such people.

D. Dominance

The simplest conflict solution to conceive of is elimination of the other party, to force them to flee, give up the fight, or to slay them. The vehicle for this solution is dominance which may develop through individuals, coalitions, or majorities.

Individual Dominance

Many creatures settle conflict by individual dominance based on fighting ability or physical strength. Thus, conflict over territory or prospective mates results in the strongest or most aggressive obtaining their individual desires while simultaneously promoting the survival of the species. Under such circumstances, "the strategy of conflict centers about injuring the other party without simultaneousl injuring the self, while inhibiting and defending against retaliatory injury from the opponent". The process is not as bloody as might be expected. Most animals, including man, replace actual physical elimination of the losing rival with symbolic injury. Aggression is checked when both agree who is the loser; he follows the rules and withdraws from the conflict. The loser goes elsewhere to compete with less formidable foes. Among some species he may reamin, but he must never again strive for leadership and he must demonstrate his obeisance to the rival who defeated him by symbolic acts of subservience.

By virtue of his formal authority, sometimes a manager can exercise dominance and dismiss one or more of the conflicting parties. Such a step seems simple and complete. "Fire him" is as tempting to modern executives as "off with his head" was to the Red Queen in Wonderland. Nonetheless, to regard all problems as people problems is too limited. Many conflict situations are not solved by getting a new employee. Marketing men and credit analysts tend to fight regardless of whether they are nice guys or S.O.B.'s. The conflict rests in the relationship of their jobs. Besides, excessive personnel shifts aggravate stress.

There is no question that judicious personnel selection and transfer are essential managerial functions. At times a manager may successfully alleviate stress and conflict by shifting and replacing people. Primarily, however, he must work with the people he has, developing stress-absorbing and conflict-resolving mechanisms.

Coalition Dominance

The Russian Bolsheviks' faith in ultimate victory rested less on Marxian inevitability than in belief that a minority coalition could prevail if it were willing to work harder, longer and smarter than anyone else. Coalitions of two or more persons are common because they can generate support out of proportion to their numbers. Even the presence of just one other supporter lends substantial strength to an individual's position. No complex organization can function without a coalition that consolidates power around a central figure. Failure to establish an executive coalition in a large organization can lead to slow decision making and even paralysis because of excessive interpersonal conflict.

Majority Dominance

A manager may endeavor to develop such a majority concensus that the nonconforming minority possesses so little power that they can safely be ignored. The minority is expected to withdraw or remain quiet. Historically, the most common device for developing such majority coalitions has been by introducing transcendent objectives. The great leader renders existing conflict irrelevant by defining a new superordinate objective that unites the conflicting parties. This objective should be highly appealing to members of the two or more groups in conflict and they must recognize that it cannot be attained by the resources and energies of the groups separately. For example, politicians have long united squabbling followers by pointing out a common enemy who would destroy them all unless they fight together. Or, the leader articulates the serious internal problems facing everyone, problems of such gravity that chaos will result unless petty dissention is dropped and cooperative behavior demonstrated. This technique of transcendent, unifying objectives is used by demogogues and dictators as well as saints and democrats testifies to its potency as a mechanism for managing conflict.

E. Hierarchical Decision Making

This was one of mankind's great innovations: the transfer of conflict management to hierarchical appeal. For some scholars, it makrs the beginning of civilization.

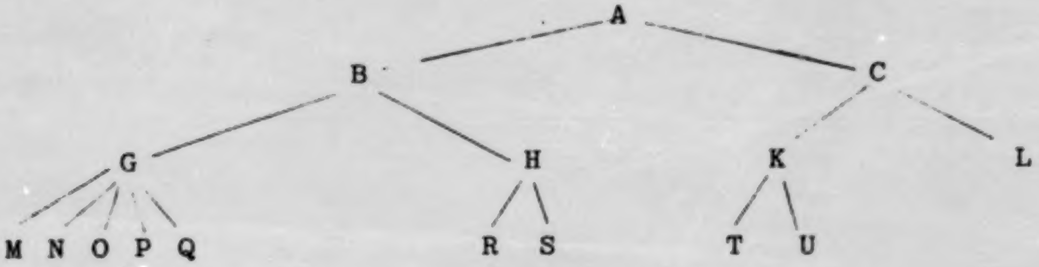
Appeal to God or Chance

Initially, the shift was more philosophical than physical. The battle went on but it was assumed that God's might was on the side of the right, that the human combat was just the vehicle for God's will. The efficiency of looking for the deity's wishes in less contentious ways was recognized some time ago, however. The stars, animal entrails, and tea leaves all served as communication media. Rationalists consider such appeals superstitious, but this is beside the point. Appeal to even a fictitious god made a major contribution to human advancement through its more efficient conflict management.

Appeal to chance also serves the same purpose even if less philosophically and religiously satisfying. A chance event like throwing dice or drawing straws is used to indicate which will dominate. The loser is expected to withdraw actually or symbolically.

Appeal to Positional Authority

If the principles of chain of command and unity of command are followed in organizations, any two people in conflict can find the common superior who links them. He can deal with the conflict. Thus, if N and P are is disagreement, their common superior G can act as conflict resolver. If H and K are in conflict, their common superior is A. He can act as judge rendering a just decision and possessing the authority to enforce it.



Persons are defined who have the authority and responsibility to make certain difficult and sometimes unpopular decisions.

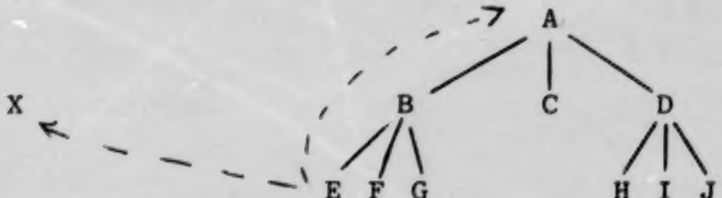
With all the attacks today on hierarchical authority systems, we do well to remember this central fact: this system was an enormous step forward in conflict management. No more efficient conflict management mechanism has been developed and this is probably the greatest contribution of hierarchy.

The hierarchical decision maker still has an important role. Nonetheless, it is shrinking. Optimal performance of this mechanism depends on a happy congruence of authority, knowledge, wisdom and subordinate respect. When the decision-maker cannot understand the issues, or the conflicting parties do not believe he does, or don't respect his authority, his ability to resolve conflict is sharply curtailed. People will not accept the superior's judgment. They will attempt to fight it out without the judge; they will try to eliminate each other like gang leaders contending over turf in North Philadelphia. Of course, a heirarchical superior can resort to his own dominance to force acceptance, but this sharply undermines the efficiency of the system.

An additional problem for hierarchical conflict management is that the neat departmental boxes and lines are breaking down in and between organizations. Boundaries are becoming indistinct. Systems are expanding so that more people are in conflict who do not have a definite common superior to whom they can appeal. Who is the common superior of college alumni and administrators? Of government regulatory agencies and business executives? Of Ralph Nader's "raiders" and company management? Or indeed, of a corporate President and his dissenting Vice Presidents when the Board of Directors is mainly an inside board? A dramatic increase in unofficial advocacy groups has characterized our society in recent years. Concern for the poor, for minorities, and for the environment has expressed itself in autonomous groups making demands on older more formal organizations. Such confrontations are increasing and they are ill-suited to the traditional judicial/bureaucratic mode of conflict management.

Due Process and Right of Appeal

If an organizational member feels that his problem has not been handled fairly or properly by his immediate superior, he may have the right to appeal to a higher manager, an independnet arbitrator, or special appeal committee. Thus, E could appeal to A or X who would make a decision binding on B and E. The assumption is that X will make a better judgment because he or they have fewer operational pressures, possess more time and are less emotionally involved than B. The appealer E may feel he will get the fairest hearing if X is composed of a variety of organizational members including his peers H, I and J.

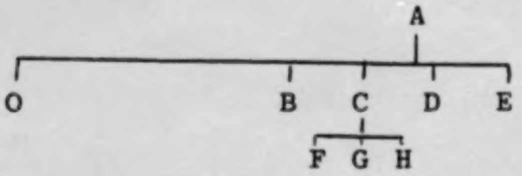


This right of appeal is a fine supplement to hierarchical decisions, but problems exist. The higher superior A may be so busy that he doesn't appreciate E's coming in. A may even be angry with B for not handling the problem satisfactorily, but he is still likely to affirm B's influence downward. If A were to override B too frequently, everyone would bypass B. In addition, B may so resent being bypassed by "trouble-maker" E that he holds a grudge. For both these reasons, E may conclude that he runs a grave risk in appealing to A who would probably only rubber stamp B's judgment anyway.

A separate arbitrator or appeals committee offers greater independence and saves A's time, but still doesn't guarantee that B won't retaliate against E for appealing. The bigger problem, however, is that arbitrators and committees are hired and paid by A's organization. He is unlikely to retain them if they continually reach judgments with which he disagrees. And he won't allow them to deal with really major conflicts - which they are probably just as happy to avoid.

The Ombudsman

The Ombudsman is not directly a mechanism for conflict resolution, but because the position stands outside the hierarchical structure, he can facilitate communications and ensure that lower levels in the hierarchy can bring their problems up to the top. For example, if H feels that he has not received proper treatment from his boss C, he can go directly to the Ombudsman O who will investigate the issue, approach C or even the top executive A to achieve a solution. Unlike an arbitrator or appeals committee, however, the ombudsman has no authority to made a decision. He can merely recommend. Yet his right to ask questions can lead to substantial informal authority for the ombudsman.



The ombudsman's greatest contribution is to help people get information and to overcome misunderstanding. He may help people to feel less alienated by expressing individual interest. He is not likely, however, to contribute to resolution of major conflicts. Since he receives his salary from the organization and he possesses no formal power, A is unlikely to allow him to deal with big issues that affect many people.

F. System Restructuring

Any organization involves the simultaneous coordination of people who must pass paper, matierlas, or ideas among themselves in some controlled sequence - giving orders, soliciting suggestions, responding to technological breakdowns, planning, etc. All of these activities and functions must be carried out through interactions with others. Thus, organizational structure is most fundamentally a design of human relationships and patterns of interaction.

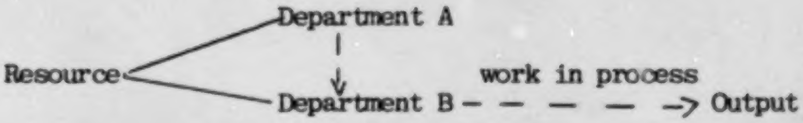
Rotating Personnel

To counter narrow loyalties and misunderstanding due to perceptual distortions, management may periodically rotate people among interdependent groups. In the short run, the newcomer is unlikely to be believed because of mistrust. Already existing conflict will probably not be reduced. In the longer run, however, exchanging people may create a favorable background for future prevention of intergroup conflict.

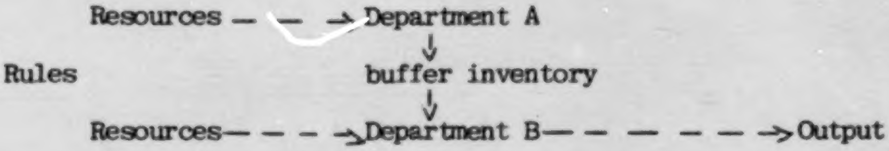
Decoupling with a Buffer

Since much conflict derives from interdependence, a manager can attempt to reduce this by "decoupling" the conflicting parties. He reduces their dependence on common resources or provides ironclad, impersonal allocation rules. Giving each control of their own resources or introducing large buffer inventories can be expensive, but they do reduce interdependence. Thus, interdependent state "A" below may be converted into decoupled state "B".

State A: Interdependent



State B: Decoupled by Rules and Inventory

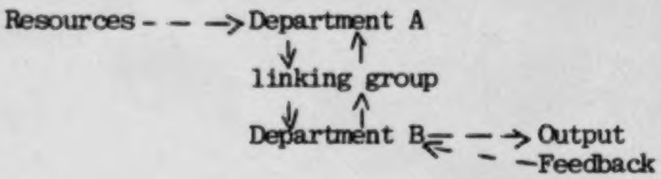


Department A sends its semi-finished products into a buffer inventory that may simply be a big bin. Department B takes goods to be finished from this inventory. Under this system, if Department A has problems and falls behind, Department B wouldn't be affected because it has the inventory to draw on.

Buffering with a Linking Role

Another form of buffering can be introduced through a "linking" position, coordinator, or integrator. His role is to facilitate communication and coordination between interdependent and potentially conflicting departments. He carries no substantial authority (other than right of access) but is supposed to promote, detect and manage differences.

State C : Buffered by a Linking Position

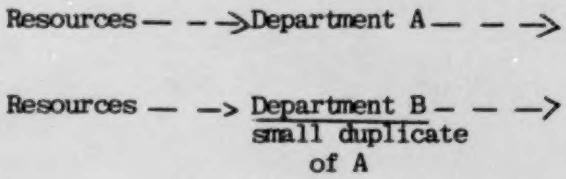


To play such a role can be extremely stressful. Many go-betweens are caught in war's crossfire. The person must be able to absorb substantial flack and withstand great pressure - or perhaps not feel the heat because of insensitivity, guaranteed security, or independent satisfaction.

Decoupling by Duplication

Decoupling sometimes takes the form of duplicating the facilities of another department upon which one is dependent. Thus, research may develop a small production unit under its control for pilot runs. Or a production department may recruit some engineers on its own to reduce its dependence on central engineering. Interdependent State A may be converted to decoupled State D.

State D: Decoupled by Duplication



It is tempting and common for managers to reduce interdependence by introducing duplicate facilities and excess resources or "organizational slack" at various stages. Extra people, money and machines can make life easier, but such suboptimization may harm the whole organization.

Unifying the Work Flow

Much stress and conflict stems from violation of the old organizational principle: "authority should equal responsibility". A manager feels upset because he doesn't control everything that he needs to perform his mission. Controlling "everything" is probably impossible, but the system might be restructured into more logical complete work units which bring more control under one hierarchical position thus decreasing ambiguity. This does increase unit size of course and additional costs for internal coordination are necessary, but benefits of defining a hierarchical judge may outweigh the costs. Thus, State A may be converted into State E.

State E: Unified Work Flow

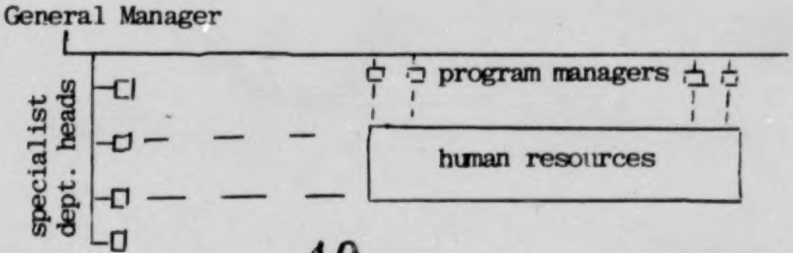
Resource — — -> Unified Department — — -> Output

The difference between decoupling through duplication as in State D and unifying the work flow as in State E is sometimes a matter of judgment and perception. Thus, production feels that developing its own small research or engineering capacity is logically unifying the task while these other groups consider it wasteful slack and illegitimate empire building. The difference is subtle, but as a rule, State D evolves informally while State E is a formal organizational change. In fact, most unified State E's may just be legitimization of previously existing duplicative State D's.

Matrix Organization

Perhaps the most persistent theme in recent literature on conflict management is confrontation. Effective managers facilitate conflict recognition and conciliation rather than "smoothing" it over by denying reality or "forcing" solutions by superior power. Such managers recognize that conflict is inevitable if they create a climate where people express independent ideas rather than just conforming to the prevailing view. What is desired is that this conflict be expressed following certain rules of confrontation.

Within organizations, a matrix structure offers one means for facilitating such confrontation. The most common matrix is illustrated below:



Such a structure is intended to promote flexible use of specialized staff on interdisciplinary programs (e.g., a sophisticated product team drawing on various scientists and engineers in electronics, hydraulics, operations research, metallurgy, etc.). Just as important is that the matrix defines a battlefield and the combatants. It recognizes the competing interests of program and specialist departments. It provides separate managers to stand up for those interests such as short-run program completion versus long-run specialist career development. The overall executive's major role is to facilitate communication and bargaining, entering into the situation as a hierarchical decision maker only when absolutely necessary.

G. Bargaining

Bargaining may be difficult to distinguish from simple dominance. Employers once strove to physically eliminate the union by firing its leaders and coercing members (some still try this of course). The crucial difference between dominance and bargaining, however, is interdependence - in dominance, the dominator doesn't need the loser any longer; in bargaining, both sides recognize their mutual dependence and that they must work together after the conflict. The two parties are aware that each is trying to influence the other, and that agreement is a function of the power they bring to the situation and their skill as bargainers.

Bargaining power refers to another person's inducement to agree on your terms. Your bargaining power is my cost of disagreeing on your terms relative to my cost of agreeing on your terms. Similarly, my bargaining power is your cost of disagreeing on my terms relative to your cost of agreeing on my terms. The power may have been bestowed by an external party - such as the power over working conditions given to the manager by his corporate directors, or the power to negotiate agreements delegated to elected union officers by the union membership. Or it may be power growing out of the relationship between the two parties - such as the power that management gives, perhaps inadvertently, to any workers (especially to skilled workers) when it hires them and becomes dependent on them.

Bargaining reflects not a single view, but a continuum from hostility to cooperation. The two ends of this continuum are distributive and integrative bargaining.

Distributive Bargaining

This approach resembles dominance, but recognizes that the other party can hurt you and that he will still be around after this round of conflict. In the short run, the relationship is viewed as a zero-sum game; what either side gains is at the expense of the other. Hence, it is bargaining over the pieces to be cut from the pie. The method of resolution is to find the size of the slice for each that reflects each side's power and ability to harm the other without totally disrupting the relationship.

Each side attempts to inflate its projected power and willingness to endure injury while endeavoring to discover the other's true minimum position. Confusion, obfuscation and deception are inherent and necessary. Most labor-management bargaining falls in this category.

Integrative Bargaining

This is a rare phenomenon. It is not a rejection of conflict because the parties still must look out for their own interests; rather it is a transcendence of conflict, the conversion from bargaining to problem solving. The focus shifts from reducing demands toward expanding the pool of resources, away from how the small pie is to be sliced toward how to bake a larger pie so that both sides can increase their welfare. Ideally, the new satisfactions are bigger than the original demands.

Seventy years ago, scientific management hoped to eliminate worker goldbricking and destructive conflict. The new industrial engineering techniques were to be used to determine "the best way" to perform each task. Since the work measurement techniques were supposed to be "scientific", labor and management were to accept them thus eliminating argument. Bargaining could them be directed to expanding production and income so that both sides could gain. This denial of the inevitability of class conflict was typically American, stirring the idealistic. For the most part, however, the techniques caught on while the philosophy was rejected. Perhaps it was just too naive to expect rational agreement on distributing limited resources regardless of how large they are absolutely. Nonetheless, it may not be too much to expect collaborative efforts to improve the pool of resources upon which both sides must draw. Then the basis could shift to distributive bargaining. Thus, integrative and distributive bargaining might alternate.

Keeping the two approaches separate is a problem however, the attitudes of distributive bargaining tend to poison the climate for integrative bargaining. In addition, entering a bargaining situation with an integrative perspective can be very dangerous if the other side views it from the distributive side. Integrative bargaining depends on candid disclosure which reduces the possibility of bluffing, thereby handicapping distributive bargaining and exposing one party to the other's exploitation.

Mediating

A manager may allow and encourage conflicting subordinates to bargain directly. If he does, he will have to mediate from time to time. The purpose of a mediator is not to decide who is right or what is just (an arbitrator or judge does that). Rather, a mediator attempts to:

1. Stop the spiral of conflict by eliminating surrender as a demand and by encouraging each party to acknowledge that they have injured the other (in effect, to grant some justification for the other's hostility to them).

2. Promote more authentic communications.

3. If requested, suggest possible solutions.

Central to conflict resolution is the repair of previous injury and protection against future harm. Conciliation therefore attempts to discontinue conflict without either side demanding or offering surrender. By discovering and communicating the true positions of the parties, the mediator assists them in confronting their real differenc and in discovering their common problems. As we have seen, the major tragedy in some conflict is that efforts to injure the other party dominate the issues dividing the two. Hence, conflict shifts from item to item, philosophy to philosophy, and the original substantive differences may be forgotten. The mediating manager's great contribution can be to return the conflict to the real issues. He can articulate the potential damage on all parties if conflict continues. When handling conflict, a mediator should:

1. Confront, invite differences
2. Listen with understanding rather than evaluation
3. Clarify the nature of the issues
4. Recognize and accept feelings
5. Suggest procedures for resolving differences
6. Cope with threats to reasonable agreement

The mediator also needs synchronization in confrontation. That is, he must make a judgment that the parties are both ready to confront each other and potentially willing to communicate. Premature confrontation may only promote escalation (a phenomenon long known to astute national leaders who delay summit conferences until agreement potential is high). Rejection of one party's overture to talk is viewed as particularly demeaning which "justifies" strong attack from the rejected party (an event which has characterized many recent conflicts - Israel and Egypt, United States and North Vietnam, Pakistan and India).

The essence of successful mediation is making the warring parties realize that they are dependent on each other and must find an area of common agreement. Such an approach assumes that the issues to be resolved are objective and substantive, not merely reflections of irrational behavior of the contending parties. A single objective definition of the problem agreed upon by both sides prior to work on solutions may be the single most important step in resolution. Upon this common definition can sometimes be built a transcendent objective. Substantial laboratory research under conditions where two parties apparently want to maximize their individual incomes indicates that many choices (almost half) are made not to maximize personal income, but to decrease the competitor's income. Relative standing seems more important than absolute benefits. If the mediator can stretch the minds of quarreling individuals or groups so they can see how their parochial viewpoints fit into a much larger system, a higher understanding may be developed that integrates seemingly diverse goals. This sense of shared goals is critical.

Managers increasingly will have to face the anxiety of presiding over conflicts below them as well as participating in bargaining themselves. Some will see bargaining as an improvement over dominance because autonomous men can look out for their own interests and manage their own affairs. They are less dependent on a superior to resolve their difficulties. Probably true, but the problem often is that people new to bargaining attempt to overly dominate the other parties so that coordination breaks down and the effects of conflict spread. The emphasis tends to be on distributive rather than integrative bargaining. This is the current state in so many institutions where the parties have just begun to deal with each other; students and Deans, players and coaches, professionals and government bureaucrats, even enlisted men and officers. All of this is similar to the early days of labor-management negotiations before some unions and employers came to recognize the commonality of their problems.

However exasperating collective negotiations are, they represent one of the most important mechanisms of conflict management. At its best, such bargaining signifies recognition and acceptance by the conflicting parties of each other's competing claims on resources within an orderly framework of law and custom. It appears that this mechanism will be expanded to many areas beyond labor and management relations. The activities of most informal advocacy groups are initially disruptive because they bring submerged issues to the surface where inevitably they clash with established institutions and contrary public opinion. For this reason, they often bring opposition and repression. But as they gain legitimacy and develop support, they will represent another means of resolving conflicts between minority interests and the dominate culture.

H. References

Conflict in Organizations - individual role stress; role conflicts and ambiguity; causes of conflict; conflict reinforcement; conflict between specialists and generalists.

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Managing Organizational Conflict - dominance; hierarchical decision making; appeal procedures; system restructuring; bargaining

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Managing Organizational Change

Ross A. Webber, Associate Professor of Management
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A. General Model: Phases in the Change Process

1. stress
2. unfreezing
3. conversion - learning
4. refreezing

B. People-centered approach to change

1. training and development programs
2. sensitivity training; t-groups
3. organizational development programs

C. System-directed approach to change

D. Resistance to Change

1. ignorance of trends
2. preference for existing social relations
3. rejection of change agent
4. subordinate participation in change
5. dangers in participation
6. desirability of shared authority

E. References

F. Suggested Cases on Managing Organizational Change

Educational Objectives for Managing Organizational Change

(1) To understand the phases in changing attitudes and behavior.

(2) To be aware of the strengths and weaknesses of various training and development programs.

(3) To understand and be aware of the assumptions, strenths, and limitations of sensitivity training and organizational development.

(4) To understand the structural approach to change and the factors that can be manipulated.

(5) To be aware of the reasons why changes are sometimes resisted.

(6) To be aware of the advantages and disadvantages of inviting participation in change.

(7) To be sensitive to the ideal conditions promoting organizational change and renewal.

These objectives are particularly appropriate to prospective social work professionals and administrators because it appears that their institutions will undergo substantal change in the near future.

A. General Model: Phases in the Change Process

The general influence model indicated that people will respond to an influencer/manager/change agent only when they want to. That is, only when to do so will result in need satisfaction. The people approach to change starts with this fundamental point: that dissatisfaction must precede change.

Creating Dissatisfaction

But, how to achieve this desired condition? The change agent could just wait until people become dissatisfied with their behavior. If he possesses confidential information about impending external events that will adversely affect the organization, he may still decide not to warn the members. He might withhold because he fears it would be too much of a shock or they wouldn't believe him or his motives.

People Approach to Change

1.	Felt need for change	dissatisfaction
2.	Unfreezing	change agent's manipulation of forces which maintain equilibrium
3.	Changing	identification with and emulation of model internalization through experience
4.	Refreezing	integration of changed attitudes and behavior

Nonetheless, a change agent doesn't have to be so passive He can endeavor to generate dissatisfaction with the present.

If the change agent is fortunate enough to posses formal authority or informal prestige, however, he may simply tell organization members that their behavior and performance is unsatisfactory; that there are threats out there in the world that will render the past irrelevant; that they all will suffer unless they give up the comfortable habits of the past.

Change Agent's Methods of
Creating Dissatisfaction
and Felt Need for Change

1. Do nothing: wait until people become aware of need for change.
2. Generate fear: tell them af coming events that will harm them unless they change.
3. Create hope: tell them of how much better things could be if they change.

As a third method of initiating stress, the creative change agent could articulate the possibilities of a better tomorrow if behavior were changed. Even if people are satisfied with existing behavior, performance and rewards, an articulate leader might be able to create a hope of something even more rewarding. What he would be doing is generating a sense of opportunity cost, of relative dissatisfaction because they could have more.

Unfreezing

The essential elements of unfreezing are removal of support for old attitudes, saturation of the environment with new values to be acquired, minimization of threats against change and maximization of reinformcement for change in the desired direction. Consider the young recruit undergoing basic military training. Fundamentally, he has no choice; he can't leave. The military change agents exert pressure to generate stress and unfreeze the recruits. The are separated physically from their families, friends and the whole civilian world. Even their own clothes may be removed and they are forbidden to leave the base. The instructors drill into the recruits that their old self-centered, civilian habits are bad, that individually they are scum, and only through changing to military bearing and behavior can they amount to anything and be rewarded by the system.

Conversion

Needless to say, many recruits become unhappy. They would prefer to leave, but if this isn't possible, they become receptive to the military's pressure to change. This change or conversion is helped along by the change agent's presentation of a model to identify with and to emulate usually a soldier whose appearance and behavior is the epitome of what the recruits are to become.

Changing by Conversion
Pre-condition-dissatisfaction

↙ ↘

Emulation

- change agent presents model of attitudes and behavior

Internalization

- change agent structures training experience that encourages learning at desired attitudes and behavior

Change is facilitated and strengthened if emulation is supplemented by internalization. A learning experience is designed so that through trial and error the person learns for himself the attitudes and behavior that are needed. For example, if the Sergeant wants to teach the recruits to keep their heads down while advancing, he can set up machine guns that fire live ammuniction at a height of thirty-six inches above the path. After showing the recruits how to do it, he has them transverse the path. They quickly learn why they must keep their heads down.

Or more complexly, the military training group can design a mock battle problem in which the soldiers who persist in independence and self-seeking behavior are captured or slain symbolically (by having a bag of flour broken over their heads). If the exercise is properly executed, the trainee will internalize the lesson through improvisation: to survive, he must be part of a team that looks out for each other.

Refreezing

Once the conversion process has occurred or the training concluded, the change agent faces another difficult step in the change process - that of refreezing the new attitudes and behavior. The organization member must be supported and rewarded for continuing his new behavior. When the military recruit leaves the intensive and isolated recruit training, he moves to an assignment where he is less separated from civilian life. He can go off the base in street clothes almost every day and may even live elsewhere. Out there, his civilian friends and family may not appreciate his new military attitudes and behavior. Indeed, they may even ridicule his short hair and shined shoes. This present the service with a problem for it must continue to support the values inculcated at recruit camp. If it doesn't, and especially if even military colleagues criticize the military way, attitudes and behavior so painfully learned will fade.

Refreezing of Newly
Learned Attitudes and Behavior

- continued rewards from the change agent or organization
- continued support from fellow organization members
- either support, tolerable criticism or continued insulation from former social set

B. People-centered Approach to Change

The people oriented approach to change takes its main form in various education and development programs. They are intended to improve one or more of the three basic skills that underlie managerial effectiveness: technical, human and conceptual. At the lowest levels, technical skills are central - the understanding of things such as equipment, methods, procedures, processes, and techniques. Indeed, a worker may well be promoted to first-line supervision precisely because he or she is the most technically competent.

	Primary Managerial Skills
Top Mgmt.	- conceptual
Middle Mgmt.	- human
Lower Management	- technical

To bridge the gap to middle management will primarily require human skill: to manifest effective interpersonal relations, to work as a team member and to build cooperation in a group.

At the high executive level, conceptual skill grows in importance: the ability to see the organization as a whole and understand how the various functions fit together in relation to the world. These three classes of skills are not mutually exclusive of course. Top management should possess certain technical and human skills as well as conceptual, but successful upward movement and performance requires shifting emphasis.

Let's examine some common forms of development programs.

Training and Development Programs

An expensive but modest approach to change is to send a manager away from the company for a resident executive program on a university campus for periods of two weeks to nine months. If the manager has explicitly requested to be sent because he feels inadequate in some aspect of management such as accounting or human relations, the change precondition might be favorable. More frequently, however, being selected is a mark of status and promise of future promotion. Nonetheless, unfreezing tends to be quite effective because the attendee is isolated from job and family. If an effective faculty can create a sense of possible improvement, the possibility for changed knowledge is good. However, simply sitting in lectures or discussion groups is unlikely to really change attitudes and behavior among basically satisfied managers. Whether the new knowledge is applied back in the firm depends greatly on whether or not it meets a felt need for the organization so that others support it. If the organization feels no need for new planning techniques, they are unlikely to be used because only the lone program attendee really understands and believes in them. The burden of change thus rests on the one returning manager to persuade others of how performance could be better.

Rather than lone individuals sent off to university programs, more managers are trained through programs composed of participants all from the same organization. Some are conducted full-time in an isolated location for sereral days or weeks, but most take place perhaps one day a week for several months. Management may explicitly define its change desires and this may create some precondition for change, but in general it depends on the individual's degree of satisfaction just as with university programs.

The actual learning process is probably inferior to the university program because unfreezing is difficult. The participants usually don't feel separated from the job. Their thoughts and concerns are there and frequently phone calls interrupt class meetings. In addition, since the learning group is from one company, the trainees are less likely to learn from each other than at more heterogeneous university programs.

If an attractive and useful idea is learned during a company program, however, the probability of actually introducing is better because the company social system should be more supportive of the change as time passes.

Sensitivity training

Traditional lectures and discussion programs just don't seem to have a profound impact on attitudes and behavior. In particular, they have little effect on how managers treat subordinates and each other. The authoritarian boss is not likely to change his style because a university or company psychologist tells him about the supposed advantages of collaborative management. He may not even be aware that he is perceived as being a tough and insensitive guy.

Laboratory training, sensitivity training or T-groups grew out of efforts to develop a training process that would exert a more profound impact on participants. The content of sensitivity training is not planning, structuring or even change. The content is what goes on in the room while it goes on: interpersonal dynamics, not organizational principles. The group is unstructured in the sense that there is no appointed leader and no assigned topics. Under the guidence and planned activities of a skilled trainer, the group explores their relationships with each other. The aim is to develop a participant's self-insight and self-awareness, to increase sensitivity to his effect on others and they on him, and to bring to the surface those factors just below the level of acute consciousness. However, it is not an exercise in individual or group psychoanalysis.

Childhood traumas and adult fixations are not explored except as a member raises them to explain his behavior.

Hope is that new knowledge and understanding will assist a participant to modify his behavior and become more interpersonally effective; that he will stop attributing his own faults to others. The mechanism for change is openness and candid feedback. By communicating authentically how they perceive and respond to each other, participants should grow in understanding.

To promote openness, the group trainer tries to create a climate of trust and helpfulness. He doesn't dominate, but provides an emulation model of personal congruency and social concern. He should also keep the group's communications on the here and now and guide them toward the joys of open, authentic and effective interpersonal relations.

Most early sensitivity training was with "stranger" groups - the participants were from different organizations and didn't know each other beforehand. Even at the meetings, the general norm was that status elsewhere is irrelevant to the group. To facilitate unfreezing, the sessions (which ranged from a few days to several weeks) are frequently held in isolated settings away from job and families. To busy managers, this separation, relaxation of pressure and ambiguous status can generate substantial stress and promote unfreezing. The lack of an authority structure or task agenda and the availability of wide-open time can be threatening, but conducive to learning a different set of attitudes and behavior.

The majority of T-group attendees report very favorably on the experience and even that their attitudes and behavior back on the job are changed: greater sensitivity to others, more egalitarian attitudes, improved communication and leadership skills including more consideration for others. In spite of these favorable views by participants, others are not so sure that there is much lasting impact. Only a minority of attendees are perceived by others as actually demonstrating changed attitudes or behavior. And little firm evidence exists that the programs have any lasting beneficial effect on organizational performance.

Although stranger group sensitivity training is fairly effective at unfreezing and conversion through emulation and integration, applying the lessons back on the job is weak. A lone individual returns from two weeks on a mountain in New England with greater sensitivity to self and others. But if he attempts to act upon these new insights, he may be in trouble because his peers, superiors and subordinates didn't attend the program. They are still behaving in the old patterns oblivious to T-group values. Their behavior and expectations about the returned participant's behavior is likely to push him back to his habitual pre-training behavior patterns. If he tries to behave openly and authentically, he may hurt himself. Others may perceive it as weakness and take advantage.

Organizational development programs

To overcome some of the defects in stranger group sensitivity training, change practitioners began transferring the process inside organizations working with teams of managers who work together on a daily basis. Initially, these were simply traditional T-groups, but with superiors, subordinates and peers. The sensitivity training is still part of organizational development, but the approach has expanded to include working on current managerial problems as well as changing beliefs, attitudes, values and structure so that the organization can adapt to new technologies, markets and challenges.

Assumptions of organizational development: Organizational Development (O.D.) is an effort: (a) planned, (b) organization-wide, (c) managed from the top, to (d) increase organizational effectiveness and health through (e) planned interventions in the organization's processes using behavioral science knowledge. Such a program will frequently commence with intensive lectures and T-group sessions followed by periodic meetings to followup on the sensitivity training with gradual shifting to discussions of concrete problems and solution. O.D. is not just a one-shot program, for it implies a long-term effort to exercise and strengthen team problem-solving ability at all levels. Inflated short-run expectations and executive impatience can sabotage the effort.

The potential advantage of such an approach is in the refreezing stage. If the group actually experiences success in developing new interpersonal attitudes and behavior, it should be much easier to continue them on the job since the same people are involved. Actually making progress on some long-standing problem is the most potent internalization mechanism.

The difficulties of the team organizational development approach are more at the other end of the change process - unfreezing. The habits of work may dominate the training. If the superior has been dominat, the group is likely to engage in little authentic communication; everyone will address their remarks to the boss in hopes of impressing him. Successful unfreezing and change is dependent on the model presented by the senior participant. If he avoids domination, if he accepts open communication without retaliation, if he is strong enough to accept status ambiguity, the O.D. process has a chance.

The consultant's role: One of the trainer/consultant's responsibilities is to assess the top manager's feelings and to help him understand what is happening. What sometimes occurs is that the boss attends a stranger T-group session, is impressed and wants to apply it in his organization. He understands the program intellectually, but may not really be emotionally aware of how open relations with subordinates are different then with strangers. Entering with good intentions, he may subtly communicate to his subordinates that they run a risk of being too frank. The program is likely to quickly collapse.

If sufficient unfreezing occurs, the change process rests on emulation of the boss (and the consultant) with internalization through the experience of solving real organizational problems. Each participant should gain a feeling of personal growth through the O.D. Sessions. The consultant helps schedule the problems to be attacked, provides substantive knowledge from theory and others' experience, and encourages frank communication.

Values implicit in organizational development: Like the trainers in laboratory training, many consultants in organizational development have personal values which they believe must come to characterize modern organizations. To the classic management problem of optimally mobilizing human resources and energy to achieve the organization's mission, O.D. adds maintaining a visible, growing organization of people whose personal needs for self worth, growth and satisfaction are met at work. These consultants assume that the old bureaucratic organization is increasingly ineffective because task and environment is changing. Problems cannot be routinized but are novel and individual; human beings demand to be treated as individuals rather than impersonal categories.

C. System - Directed Approach to Change

Successful change is not exclusively people oriented but also includes structural elements. Organizational development programs working with management teams endeavor to foster more flexible attitudes and authentic communications, but structural answers to real organizational problems are what keep the program going. And structural reorganizations are much more likely to actually be translated into changed behavior and improved performance if they include a wide range of people in the deliberation that prepares attitudes. Successful change most frequently follows a path of shared authority in a consistent sequence of events. These can be summarized as follows:

* Stress arises or is created so that many people, but especially the senior manager, is under pressure and dissatisfied with present behavior and performance.

* A respected and influential new person acts as change agent. He may be a senior manager, a company staff specialist or an external consultant who deals directly with the senior manager. An outsider has a freedom of pressure from the organization's past. No staff specialist or consultant, however, can replace the manager. They can assist but management must make the commitment.

* Under the guidance of the manager/change agent, a frank examination of past policy and practice is conducted to define inadequacies in relation to the future.

* Top management of the relevent unit becomes intimately involved in the change process including support for examination of the past.

* The change agent involves multiple organizational levels in fact finding and analysis of present problems before change proposals are formulated.
* The change agent provides new ideas which depart from the organization's past practices.
* Problem solutions and changes are tested on a small scale and checked with personnel at various levels to determine unrealistic aspects or planning gaps.
* The success of small changes creates a climate for subsequent change so that an expanding number of people percieve their personal interests as being served by organizational change.

This pattern underscores that change is not a plan that should be created on high for the peasants down below to unilaterally implement by modifying their behavior. Rather, development and implementation should include a heavy flow of communications up and down.

D. Resistance to Change

Most people accommodate the changing conditions with difficulty. We try to protect ourselves against the shock of change by continuing the familiar habits of the past - even when they are incongruous to the present.

Ignorence of trends

Consider the owner/manager of a small printing establishment. Concentrating on straight letterpress printing for a wide variety of lical and regional customers, he was very successful. When offset printing came along, the owner felt little need to add the new technology because "I don't have room," "I don't have time," "It produces lousy copy," "None of my customers would use it," and so on. This resistance to new technology went along with a backward-looking view toward certain customers. The largest institutional customer was the local government, followed by the local hospital, schools, and churches. The were good customers, even if slow payers, but the owner/manager's perception of them was distorted by a certain contempt for nonprofit institutions. Namely, they were supposed to be badly managed, inefficient, and not greatly concerned about costs - especially politicians who only collected taxes and spent money. But, he was wrong. Cost pressures on these institutions were great and increased with affluence rather than decreased. Quality was a lesser concern (and offset quality improved with time anyway). He lost an opportunity to grow because of his perception of historical trends.

Preference for existing social relations

Most people prefer moderate change and strive to introduce variety into work and life. Resistance manifests itself only when the social system of past and present is relatively satisfying. Resistance to change is mainly to change in the social system; the patterns of authroity, status and sentiment. For example, change in technology usually means a change in social relationships. It is this change which is often resented.

Rejection of change source

The major problem is that change is frequently initiated by narrow specialists or technocratic managers insensitive to the interdependencies of people, technology and organizations. They concentrate on the technical and supposedly "rational" aspects to the detriment of the social and emotional. This ignorance frequently means they underestimate the time required for change and that simply installing a new machine or constructing a new building will not guarantee that productivity will improve immediately. Furthermore, many managerial change agents don't consult lower personnel for their ideas. Consequently, change plans can be overly theoretical and even if generally valid are faulty on details. These small errors, however, can become symbols to the workers of the unrealism of the change.

In effect all creation implicitly criticizes that which already exists - and this is one of the reasons why it is so frequently rejected, even (and especially) by those who were the leaders in some previous innovation. In fighting for their own changes, they have committed their personalities, reputations and careers to the correctness of their earlier decisions. They often find it difficult to believe that conditions have changed so much so rapidly that further change is necessary so soon.

In summary, there appear to be at least eleven general reasons why innovation and change are resisted:

* to protect social status or prerogative
* to protect an existing way of life
* to prevent a devaluation of capital invested in existing facilities
* to prevent a reduction of livelihood because the innovation or change would devalue present knowledge or skill
* to prevent the elimination of a job or profession
* to avoid the cost of replacing or modifying present systems
* because the innovation opposes social customs, fashions, tastes and the habits of everyday life

- because the change conflicts with existing laws (which may well be designed to protect the status quo)
- because of rigidity common to large and bureaucratic organizations
- because organized groups tend to force conformity
- because of the reluctance of an individual or group to disturb the equilibrium of the organization or society

Subordinate participation in change

Participation in the formulation of change frequently improves its implmentation, but it is no panacea and it certainly doesn't guarantee that resistance will magically disappear. Participation through discussion exerts its greatest positive impact on creating the pre-condition for change - the desire for change. Listening to a scholar or supervisor lecture on the need for change generally is less effective than mutual and open discussion of future trends and why present behavior won't work and if the group discussion leads to concensus that change is desirable, any change plan is more likely to be followed.

Dangers of Participation

A manager can be faced with a dilemma. On the basis of confidential information or greater perceptiveness of environmental trends, he may conclude that present organizational behavior will soon become ineffective. Yet, he may fear that he will be unable to convince his subordinates of his view. If they are satisfied with the present and if until now he has expressed satisfaction with their performance, they may be reluctant to change on the basis of the boss's need, not theirs. The superior runs a risk if he invites subordinate participation in a general discussion of the desirability of change. They may conclude change is not needed. If they do, he is faced with either unilaterally imposing change or abdicating to their decision. Neither of these alternatives are very attractive. If he imposes change via his authority after his people have dicussed and rejected the matter, they may interpret his solicitation as a show; that his participation was really an attempt to manipulate them into thinking they were participating when in fact the boss had already made up his mind. The door to future authentic participation may be closed.

Thus the central danger of all efforts to solicit opinions or hold formal votes is that subordinates may recommend something different than the superior wants. Before initiating such democratic or participative methods, a manager must ask himself whether he is willing to live with a subordinate decision against change. If not, some other approach is desirable.

Of course, an effective manager/change agent should also be a politician. His informal communications and contacts should enable him to formulate a fairly good understanding of attitudes and interests before he actually goes to his people. He might conclude that a majority already recognizes the problem and is receptive to change. If such is the case, a participative approach would be well recieved and he would be widely admired. The manager, however, should avoid taking a change issue to his people if his intelligence tells him that they are deeply split with no majority. A participative approach here might exacerbate hard feelings and lead to organizational paralysis.

Desirability of shared authority

In the continuum of change alternatives . . . . .

unilateral imposition by authority	----------	shared authority in problem solving	-------------	decision delegated to subords

most successful change implementation calls in the middle range. The manager allows the people involved to play a major role in determining the details of change and implementation methods but he retains the authority to initiate change whether agreed to or not. What this approach requires is a respected, knowledgeable and articulate manager/change agent who enjoys a high probability of persuading his people that objective conditions demand change. Through agreement or faith, they come to believe that present ways will no longer suffice. Important is that he develop general agreement on the organization's objectives, basic problems and why what is being done won't work. Once he gains this basic concensus, however, either the solution is self-evident or he can safely delegate confident that most will be striving toward the desired end.

While such a change agent/manager is taking the high road of rational persuasion and unifying interests, simultaneously he may also be communicating a lower message of fear. While arguing that objective conditions make change inevitable, unspoken may the threat that if you don't agree and participate, he is going to unilaterally impose change anyway. Therefore, you might get a better deal if you join in the process and share some of the responsibility.

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Open or closed in the Operating Room?
Race Relations in the U.S. Navy
Saint Martin's Challenge
The Quality Camera Company, Inc.
The Case of the Dope Department

PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN COLLECTIVE BARGAINING TO BE PROVIDED BY A GRADUATE SCHOOL OF SOCIAL WORK

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PART I

OBJECTIVES

1. To provide students in a Graduate School of Social Work with a one semester course in which they prepare themselves professionally to deal with the problems of industrial relations and collective bargaining which they will confront wither as professional social workers of managers in either public sector social welfare agencies, or in the private voluntary agency.

2. To review the history of industrial relations and industrial relations systems in the United States which provide a rich comparison of the private industrial relations experience with that emerging in the public sector and in the "not for profit" agencies in which the holders of the MSW degree will be employed.

3. To describe the industrial relations influences of the early Common Law, the rise of the early American unions, the anti-union influence of the Sherman and Clayton Acts; the injunctive proceedings of the courts in the 19th Century which impeded the progress of union organization; the passage of the more liberal national legislation such as the Norris-LaGuardia Anti-injunction Act; the National Industrial Recovery Act; the Wagner Act and then the return to a balance of power between Labor and Management in the passage of the Taft-Hartley and Landrum-Griffin Acts.

4. To compare this rich labor experience with the passage of the recent state laws which permit public sector and "not for profit" agency bargaining which has facilitated collective bargaining on a state by state basis for public school teachers, college professors, nurses, police and firemen and all types of state and local employees, including social workers.

5. To contrast the changing role of personnel administration under state and local civil service compared to its philosophy under collective bargaining.

6. To study the attitudes of such organizations as the National Educational Association and the National Association of Social Workers as they "put their professionism on the line" by involving themselves as collective bargaining representatives for the professionals they represent.

7. To compare the ideals and pragmatics of these organizations with the American Federation of Teachers AFL-CIO and the American Federation of State, County and Municipal Workers (AFSCME) AFL-CIO.

8. To provide insights on industrial relations systems; their environment, the participants, employers, employees, government and the complex of rules under which the participants operate, and to study the interaction of these factors and to determine how they affect the decision-making process.

9. To study both the individual and the employer in the labor market; to analyze and study collective bargaining processes such as recognition, appropriate bargaining units, negotiation processes, contract drafting and administration, grievance procedures and arbitration, impasse resolution and mediation, rights of both workers and employers, management discipline and due process procedures.

10. To examine the frontier issues in industrial relations as they affect social workers and other professionals.

11. To prepare future social work administrators for the management of collective bargaining.

PART II

BEHAVIORAL QUESTIONS WHICH SHOULD BE ANSWERED AFTER COMPLETING A GRADUATE COURSE IN COLLECTIVE BARGAINING FOR SOCIAL WORKERS

1. Contrast Labor Movement with current Labor Unions you know.

2. Contrast the "professionalism" of the National Association of Social Workers with current directions in social action.

3. Does the Social Worker perceive NASW as one kind of union as contrasted to the American Federation of State, County and Municipal Employees (AFSCME) AFL-CIO?

4. Contrast the needs of the professional in collective bargaining with the needs of the bargaining unit which might include ancillaries, paraprofessionals, lay workers, clerks, maintenance personnel, etc.

5. Compare the Social Work Agency Director of Supervisor as a professional colleague in NASW with his role under various state labor relations laws.

6. Do social workers perceive satisfaction over size of case loads, autonomy, occupational integrity and identification, individual satisfaction and career development only through collective bargaining?

7. Compare paternalistic roles of the administrators and voluntary agency boards with the employer-like roles when faced with "management rights" problems arising from collective bargaining or greater decision-making involvement of social workers in an agency process.

8. Can an organization of professionals integrate traditional bargaining with professional goals such as high quality service to clients?

9. Compare the board member as a "volunteer" with your attitudes to him when he is perceived as an "employer".

10. Compare behavior of a professional social worker in a so-called "middle class" voluntary agency vis-a-vis the behavior of the professional in a public agency catering to the "poor" as in a New York City Department of Welfare, or in a Philadelphia County Board of Assistance.

11. Contrast the behavior of a professional in a voluntary agency which he or she may dominate, with or without a bargaining unit, with that of the behavior in a public agency with a bargaining unit in which clerks and ancillaries may dominate in number.

12. Compare behavior of a professional belonging to a national union dominated by public employees such as the American Federation of State,County and Municipal Employees with one in an independent union such as the Social Service Employees Union in New York City or Cleveland.

13. Contrast the behavior of a board member in his role in a specific voluntary agency compared to his role on the budget and planning committee of a United Fund or United Foundation with respect to collective bargaining.

14. Compare the roles of the liberal or conservative professionals who belonged to unions in the 30's and 40's when the State, County and Municipal Workers Union, CIO and the United Office and Professional Workers were dominated by Communists with current day professional social work unions . UOPW was expelled by CIO in the 50's, too many social workers wanted to change the system.

15. Study the role of the social work faculty member in preparing curricula to develop good judgment in the professional trainee with respect to collective bargaining vis-a-vis the faculty member's own beliefs on the subject.

16. Evaluate the role of the professional graduate student intern in a training agency as he struggles to be dispassionate about collective bargaining issues which might affect his or her own future security.

17. Evaluate the role of the professional with respect to the NASW code of ethics governing conduct during an organizing period, during a strike, while on a picket line or engaging in aggressive strategy.

18. Evaluate the union's role in bread and butter issues (recognition, wages, pensions, health benefits) versus its role in advocacy for clients; as a partisan agency supporting oppressed groups within the community; or as an agent representing the workers' interests for greater control in the planning and delivery of services within the agency.

19. Rethink the changing role of the social worker involved in unionism which is pressing for broader representation on United Fund and Community Agency Boards, including minority groups, client groups, unions.

PART III

COURSE OUTLINE AND READINGS

Week 1 The Concept of an Industrial Relations System

Text: Lloyd G. Reynolds, Labor Economics and Labor Relations, 6th edition Prentice-Hall, Inc. Englewood Cliffs, N.J. 1974
Ch. 1, "Labor In Industrial Society", Ch. 14, "Industrial Relations Systems: A Comparative View"

John T. Dunlap, Industrial Relations Systems, Introduction pp V-IX and Chapter 1, "An Industrial Relations System" pp 1-32.

O.W. Phelps, "A Structural Model of the U.S. Labor Market", Industrial and Labor Relations Review, Vol 10, No. 3, April 1957, pp 402-423.

C. Kerr and A. Segal, "The Structuring of the Labor Force in Industrial Society: New Dimensions and New Functions", Industrial and Labor Relations Review, January 1955, pp 151-168

The Labor Market as an Industrial Relations System

The Individual in the Labor Market

Text: L.G. Reynolds, Ch. 2, "The Labor Force: Quantity"; Ch. 3, "The Labor Force: Quality", Ch. 4, "The Labor Force: Employment"

Bennett Harrison, "Employment, Unemployment and the Structure of the Urban Labor Market" Wharton Quarterly, Spring 1972, University of Pennsylvania, Phila., Pa.

The Employer in the Labor Market

L.G. Reynolds, Ch. 5, "Simple Labor Market Models"; Ch. 6, "Labor Markets in Operation", Ch. 13, "Inequality, Poverty and Public Policy"

Strauss and Sayles, Personnel: The Human Problems of Management, 3rd edition, 1972; Ch. 19 "Recruitment and Selections" pp 409-439.

The Government in the Labor Market

L.G. Reynolds, Ch. 7, "Labor Market Policy: Information and Training"; Ch. 8, "Labor Market Policy: Discrimination"; Ch. 13, "Inequality, Poverty and Public Policy"

Victor Fuchs, "Women's Earnings: Recent Trends and Long Run Prospects", Monthly Labor Review, May 1974

Week 2 The Place of Personnel Administration in the Industrial Relations System

Text: Strauss and Sayles, Personnel, The Human Problems of Management; 2nd edition, Prentice Hall, Englewood Cliffs, N.J., Ch. 18, "The Role of Personnel Administration"; Ch. 1, "The Meaning of Work", Ch. 2, "Technology and Job Satisfaction; Blue Collar Work"; Ch. 3, "Technology and Job Satisfaction, Automation and White Collar Work", Ch. 4, "Work Groups and Informal Organization"; Ch. 5, "Unions and Labor Relations".

Wendell French, The Personnel Management Process, Houghten Mifflin Co., Boston, Mass, 3rd edition, 1974
Ch. 1, "A Definition of the Personnel Management Process and an Overview"; Ch. 2, "A History of Modern Personnel Management"; Ch. 4, "The (process) Model Applied to Personnel Management", Ch. 26, "The Validity of the American Collective Bargaining System".

Edwin B. Flippe, Principles of Personnel Management; 3rd edition; McGraw-Hill Book Co., New York, 1971
Ch. 1, "The Nature and Challenge of Personnel Management";, Ch. 4, "Organizing the Personnel Functions"; Ch. 5, "Planning and Controlling the Personnel Program", Ch. 6, "Job Analysis and Manpower Requirements"; Ch. 7 "Recruitment and Hiring", Ch. 8,"Tests and Interviews", Ch. 10, "Training Operative Personnel"; Ch. 11, "Executive Development"; Ch. 13, "Performance Appraisal"; Ch. 14, "Base Compensation-Job"Ch. 15, "Incentive Compensation-Man": Ch. 27, "Personnel Research".

William F. Glueck, Personnel, A Diagnostic Approach, Business Publications Inc., Dallas, Texas, 1974
Ch. 3, "Environment and Personnel", Ch. 8, "Career Development and Counseling"; Ch. 11, "Selection and Evaluation of Managers"; Ch. 17, "Affirmative Action Programs", Ch. 19, "Discipline and the Difficult Employee".

Suggested: Wage and Salary Administration in A Dynamic Economy, Leonard Burgess; Harcourt, Brace and Work, Inc., 1968, 147 pages.

Week 3 Collective Bargaining in the Non-Public Industrial Relations System

The Development of Unionism

Text: L.G. Reynolds, Ch. 15, "The Evolution of American Unionism", Ch. 16, "The Government of Trade Unions".

G.F. Bloom and H.R. Northrup, Economics of Labor Relations, 7th edition, Irwin, 1973.
Ch. 1, "The Nature of Labor Problems"; Ch. 2, "History of the American Labor Movement".

Public Policy and the Law of Collective Bargaining

Bloom and Northrup, Ch. 19, "The Taft-Hartley Act"; Ch. 20, "The Landrum-Griffin Act", Ch. 18, "Government Control of the Weapons of Conflict", (Injunctions, the Norris-LaGuardia Act, Sherman Act Decisions, Picketing, National Emergency Strikes, etc.)

L.G. Reynolds, Ch. 24, "Public Policy: Development and Administration", Ch. 25, "Rights and Responsibilities", Ch. 26, "The Use of Economic Weapons".

The Process of Collective Bargaining

L.G. Reynolds, Ch. 17, "Collective Bargaining, Union and Management Approaches", Ch. 18, "Collective Bargaining Procedures", Ch. 19, "Bargaining Power, Deadlocks and Strikes".

Suggested: Hildebrand, G.H., "Cloudy Future for Coalition Bargaining", Harvard Business Review, Vol. 46, No. 6, Nov-Dec 1968, pp. 114-128.

Fahne, H.J., "Coalition Bargaining and the Future of the Union Structure, Labor Law Journal, June 1967, pp. 353-359.

Simkin, W.E. and Chamberlain, N.W., "Effects of Structure of Collective Bargaining in Selected Industries - A Discussion", Industrial Relations Research Association, Proceedings, Spring 1970 and Labor Law Journal August 1970, pp. 513-517.

The Negotiation Process

Bloom and Northrup; Ch. 14, "Organizing and Negotiating".
L.G. Reynolds, Ch. 3, "The Negotiation Process", pp 51-81, Ch. 7, "Bargaining Power, pp. 162-190.

Suggested: H.R. Northrup, "The Case for Boulwarism", Harvard Business Review, Vol. 41, No. 5, Sept.-Oct., 1963, pp 86-97.

Barbash, Jack, "Union Response to the Hard Line", Industrial Relations Vol 1, No. 1, October 1961, pp 25-38

Kuhn, J.W., "A New View of Boulwarism: The Significance of the GE Strike", Labor Law Journal, Sept. 1970 pp 682-590.

Weeks 4-5 Collective Bargaining in the Public Sector and in the Not-For-Profit Agencies

Text: Collective Bargaining in Public Employment; Michael H. Moskow, J. Joseph Loewenberg and Edward Cliffer Koziara, Random House, New York, 1969

Ch. 1, "Government and Public Employment"
  a. Government Service, p. 3
  b. Government Finance, p. 4
  c. Government Revenues, p. 6
  d. The Budget, p. 8
  e. Composition of the Public Sector, p. 9
  f. Unique Aspects of the Public Employer, p. 14 (Finances, separation of powers, sovereign nature of the state)

Ch. 2, "Collective Bargaining for Federal Employees"
  a. Federal Employment (characteristics, development of personnel administration, employee organizations, background of collective bargaining), pp 20-37
  b. Executive Order 10988 (Management organization, employee organizations, implementing directives) pp 38-46

c. Collective Bargaining, pp 47-68
  1. Unit determination and representation procedures
  2. Recognition
  3. Scope of bargaining
  4. Written agreements
  5. Conduct of negotiations
  6. Grievances
  7. Strikes
  8. Impasse procedures

d. Pressures for change , p. 69
e. Executive Order 11491, p. 72

Ch. 3,"Collective Bargaining for State, County and Municipal Employees
a. Organization of State and Local Government, p. 80
  1. Employment in State and Local Government, p. 82
  2. Structure and Financing, p. 82
  3. Civil Service Systems, p. 87

b. Employee Organizations
  1. Unions, p. 89
  2. Public employee associations, p. 93

c. Collective Bargaining
  1. Legal Framework (state lasw), p. 97
  2. Recognition, p. 97
  3. Determination of Bargaining Units, p. 101
  4. Union Security, p. 104
  5. Scope of bargaining & written agreements, p. 106
  6. Conduct of negotiations, p. 107
  7. Grievances, p. 113
  8. Unfair labor practises, p. 115
  9. Strikes, p. 117
  10. Impasse procedures, p. 119

Other Readings:

James A. Maxwell, Financing State and Local Governments, Washington, D.C., The Brooking Institution, 1967, pp 23-39

Samuel Krislev, The Negro in Federal Employment, Minneapolis, the University of Minnesota Press, 1965, p. 94-107

Kurt L. Hanslowe, The Emerging Law of Labor Relations in Public Employment, New York State School of Industrial & Labor Relations, 1967 (scan)

Jack Stieber, Public Employee Unionism, Brookings, 1973, (scan), Excellent on the structure of unions.

Herbert Kaufman, "The Growth of the Federal Personnel System", in the American Assembly, Wallace S. Sayre, editor, The Federal Government Service, Prentice Hall, 1965, Englewood Cliffs, N.J.

Louis J. Van Mel, "The TVA Experience" in Collective Bargaining in the Public Service, K.O. Warner, editor, Public Personnel Association, Chicago, 1967, pp 85-94

Winston C. Crouch, *The American City and Its Organized Employees*, Washington, D.C., International City Managers Association, 1969, pp 32-37

Joseph P. Goldberg, "Public Employee Developments in 1971", *Monthly Labor Review*, Vol. 95, Jan. 1972, p. 56.

Harry H. Wellington and Ralph K, Winter, Jr., *The Unions and the Cities* (Studies of unionism in government), Washington, D.C., Brookings Institute 1971 (scan)

For good summaries of the federal public employee bargaining arrangements, see Lee C. Shaw, "The Development of Federal and State Laws", in Zageria, *Public Workers and Public Unions*, pp 24-26, and Harriet E. Berger, "The Old Order Giveth Away to the New", A comparison of Executive Order 10988 with Executive Order 11491, *Labor Law Journal* Vol 21, Feb. 1970 pp 79-87.

Weeks 6-7 The Expanding Scope of Collective Bargaining in the Public and Not-For-Profit Sectors

1. Wisconsin in 1959 adopted the first state public employee bargaining law, and by 1972, 20 states had followed suit.

   (Secure the texts of the following state laws; California, Connecticut, Delaware, Hawaii, Kansas, Maine, Massachusetts, Michigan, Nebraska, Nevada, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, and Wisconsin.)

   Many of these state laws provide both for collective bargaining on the part of social workers and related positions, but as under Act 195 for Pennsylvania, provide for collective bargaining for social work professionals and non-professionals in hospitals, private voluntary agencies and the not-for-profit sector. Teachers are also covered in many of these statutes.

2. Fifteen states have enacted separate statutes governing the collective bargaining of teachers. These are: Alaska, California, Connecticut, Delaware, Idaho, Kansas, Maryland, Minnesota, Montana, Nebraska, North Dakota, Oregon, Rhode Island, Vermont and Washington. (These statutes are available in the Library.)

3. There have been 10 special acts for firemen and policemen, see texts in Library. Firemen only: Alabama, Florida, Georgia, Idaho, Wyoming, and Vermont. Firemen and Policemen: Oklahoma, Pennsylvania (provides for compulsory arbitration), Rhode Island and South Dakota.

4. Other states have enacted laws governing the public sector bargaining or utility bargaining in urban transit, port authorities, etc.

   Reading: Harold T. Barnum, "From Public to Private; Labor Relations in Urban Transit", *Industrial and Labor Relations Review*, Vol. 25, October 1971 pp 95-115.

5. Other reading in this section:

Doherty, Robert E., "Public Employee Bargaining and the Conferral of Public Benefits", Proceedings of the Industrial Relations Research Association, Spring Meeting, 1971.

Seidman, Joel, "State Legislation on Collective Bargaining by Public Employees, Labor Law Journal, Jan, 1971

Bakke, E.W., "Reflections on the Future of Bargaining in the Public Sector", Monthly Labor Review, Vol, 93, No. 7, July 1970, pp 21-25

Taylor G.W., "Public Employment: Strikes or Procedures?", Industrial and Labor Relations Review, Vol, 20, No. 4, July 1967, pp 617-639.

Ross, D.B., "The Arbitration of Public Employee Wage Disputes", Industrial and Labor Relations Review, Oct. 1969, pp 3-14

Civil Service Conflicts with Public Sector Collective Bargaining

1. Conflict of law, where Civil Service governs such items as promotion, pay increases, job protection, grievances, etc.

2. Duality of protection, doctrine of double tenure.

3. Automatic wage increases on incremental basis vs negotiated increases.

Readings: See U.S. Department of Labor, Labor-Management Services Administration, Collective Bargaining in Public Employment and the Merit System, Washington, D.C., U.S. Govt. Printing Office, 1972.

Perry, Charles R. and Wildman, Wesley A., The Impact of Negotiations on Public Education, Worthington Ohio, Jones Publishing Co., 1970 (skim)

Zageria, Sam (ed), Public Workers and Public Unions, Prentice-Hall, Englewood Cliffs, N.J., 1972 (series of articles) (skin)

B.V.H. Schneider, "Collective Bargaining and the Federal Civil Service" Industrial Relations, May 1964, p. 100

Weeks 8 & 9 Participants in Collective Bargaining

Text: Moskow, Loewenberg and Koziara

Ch.VI 'Management: Political Nature of Public Management, p. 206 Sovereignty, distribution of power, who is the public employer? Management reaction to collective bargaining, impact of collective bargaining on management

"Employee Organizations" p. 218, Membership, external causes of membership growth and increased activities in employee organizations, repercussions on employee organizations.

"Third Party Participants", p. 226

Recognition and Scope of Negotiations

Ch. VII, Recognition, p. 231
Unit Determination, p. 233
Scope of Bargaining, P. 239 (wages and other economic matters; hours of employment; employee organization matters; grievance procedures; grievance arbitration; issues on the scope of bargaining.)

The Process of Collective Bargaining in Public Employment

Ch. VIII, Bargaining Environment, p. 261
Public Participation: Multilateral Bargaining, p. 253 (Timing of public participation; variations in public sector multi-lateral bargaining; comparisons of multilateral collective bargaining in the private and public sector.)
Interunion Relations, p. 261
Ratification, p. 262
Lobbying, p. 263
Pressure Tactics, P. 269
Impasse Procedures, P. 276
(Decision by employer, relative political power in legislature mediation and fact-finding; binding arbitration, modified right to strike, unlimited right to strike.)

Readings: "Multilateral Bargaining in the Public Sector", Kenneth McLennan and Michael H. Moskow, Twenty-first Annual Proceedings of the Industrial Relations Research Association, 1969, pp 31-40

G.W. Taylor, et al, Governor's Committee on Public Employee Relations Final Report (for New York State).

Recommendations for the New York State Taylor Law

Weeks 10 & 11 Collective Bargaining in Public Education

(Materials service as contrast to the coming section on collective bargaining in social work.)

Text: Teachers, Administrators and Collective Bargaining, Edward B. Shils and C. Taylor Whittier, Thomas Y. Crowell, N.Y., 1968

Ch. 1, "Why Teachers See to Strengthen their Security through Negotiations".
Ch. 2, "The Organizational Rivalry of the National Education Association (NEA) and the American Federation of Teachers (AFT), AFL/CIO"
Ch. 6, "Personnel Responsibilities of the School Administrator Prior to Exclusive Recognition"
Ch. 7, "Negotiating with Non-teaching Employee Organizations"
Ch. 9, "Determining the Appropriate Bargaining Unit and Conducting Elections"

Ch. 10, "The Role of the Superintendent and the School Board in Collective Negotiations"
Ch. 12, "Preparing for Negotiations, Role of Consultants, Co-Position of the Bargaining Team and Preparation of Resource Materials".
Ch. 21, "Techniques in Drafting an Agreement".

Readings: Neirynek R.W., "Teachers Strike, A New Militancy", Labor Law Journal, May 1968, pp 292-312

Michael H. Moskow, Teachers and Unions, Phila., University of Pennsylvania Press, 1966 (skim)

Weeks 12, 13 & 14 Collective Bargaining in Social Work

1. Definition of"Social Workers"

There are various definitions. For the purposes of collective bargaining, the important point is that case workers employed by Departments of Public Assistance or County Welfare Boards are rarely professionally trained social workers (professional social workers have either a B.S.W. or M.S.W.). This group, however, constitutes the major source of union membership, principally in the large cities. Since there is no union or association of social workers for collective bargaining purposes, we have no data on membership.

Note: The National Association of Social Workers, unlike the National Education Association, the American Nurses Association of the Professional Engineers Association, does not represent social workers in collective bargaining.

2. Employment of Social Workers

Social workers are employed by private and public agencies. The former tend to be small and the latter are larger. If employed in the public sector, social workers are covered by the existing merit system. If public workers are unionized, they may have a separate bargaining unit or may be included in a larger one. Some State laws, as Act 195 in Pennsylvania, permit professional employees to vote separately for either a professional unit or inclusion in a larger one.

Social workers employed by private agencies are unionized in some metropolitan areas. In New York City, for example, because Jewish social agencies had a tradition of and commitment to social betterment, social workers employed by Jewish agencies formed unions and negotiated contracts with the agencies.

Professional social workers are employed in a variety of private institutions. For example, psychiatric clinics employ social workers; hospitals employe them; nursing and senior rest homes, etc. In such institutions social workers would be grouped with other professionals or a more inclusive unit if collective bargaining exists.

3. Structure of Unions

Reading: Jack Stieber, Publ:c Employee Unionism (Brookings, 1973)

American Federation of State, County & Municipal (AFSCME) and Service Employees International Union (SEIU) appear to represent most of the unionized social workers, the latter includes "social service" employees, mainly employees of DPA and Welfare Boards. Note, however, that in Chicago and Cook County, employees of CCDPA are represented by the Independent Union of Public Aid Employees. (Arnold Weber, "Paradise Lost: Or Whatever Happened to the Chicago Social Workers", Loewenberg and Moskow, eds.

Collective Bargaining in Government

Stieber reports (p. 141) that SEIU, a "mixed" union (members in both private and public sectors unlike AFSCME with members only in the public sector) represents social workers, especially in California. (Caveat: Stieber uses "social workers" to include employees of welfare departments.)

Stieber makes two additional points worthy of consideration: "By far, the longest strikes have occurred in social services . . ." (;. 167) and "Social Workers Local 535 was active politically in 1969 for Thomas Bradley. . ." (p. 200). Each item suggests various implications and both are reinforcing. One implication is that social workers are militant, therefore, long strikes, or public employers resist strongly unionization of social workers, hence long strikes. Also, social workers use political pressure both for their own bargaining goals as well as to "improve and better" society.

Related to the above, but covered later, is the fact that Social Worker Local 535 lobbies for improved benefits to welfare recipients.

4. Scope of Bargaining

All professional unions and all managers of professionals face the issue of the proper subjects for bargaining. Unions of professionals seek to bargain over "professional" items which managers claim are outside the scope of traditional bargaining subjects.

Archie Kleingartner notes that "social workers want a strong voice in the standards of service they provide to the clients" and Stieber, noted earlier, points out how California social workers pressure the legislature to improve benefits for welfare recipients. Within the past few years, social workers as a profession have divided on whether social workers should or should not play an "activist" role on behalf of the poor. (Relating this to CB would be a stimulating point for teachers of social work students since teachers would be compelled to take a position on this issue.)

Reading: A. Kleingartner, "Collective Bargaining Between Salaried Professionals and Public Sector Management", Public Administration Review, March-April, 1973, pp 165-172

Other troublesome scope questions relate to the size of case loads, (as number of pupils in a classroom in educational negotiations), autonomy, occupational integrity and identification, individual satisfaction and career development, and other job and professional areas. Although professionals seek economic security and enhancement, they believe that the level of rewards should be pegged not so much to the con-ribution made to the employing agency, or the need for having adequate income, but rather that rewards bear a direct relationship to the quality of service rendered. It is in the above areas, therefore, that fundamental issues arise regarding the nature and extent of collective bargaining subjects. Indeed, the question is raised whether an organization of professionals can (or should?) integrate traditional bargaining with professional goals.

5. Management Response to Unionization

Kleingartner notes that management (private and public) is reluctant and apprehensive about bargaining with professional unions. It is concerned about unions becoming involved in non-labor issues for fear of losing control and reducing operating efficiency. It, as managers of private-profit organizations, is concerned about managerial prerogatives and authority.

6. Should Social Workers Unionize?

   a. Can social work faculties see professionals forming labor unions and engaging in gritting bargaining?

   b. Do professionals see social work as having a strong value base for clients and do they view unionization as contrary to these values?

   c. Do social work faculty members see a possible accommodation between unionization and social work goals?

   d. Are unions viewed as narrow, parochial and conservative in their goals, strategies and internal procedures?

   e. Are picketing and strikes viewed as "unbecoming" for professional social workers?"

Readings: Milton Tambur, "Unions and Voluntary Agencies", Social Work, Vol. 18, July 1973, pp 41-47

Nancy Chitnis and Gae Tigelaar, "The Impact of a Strike on Graduate Students", Social Work, Vol 16, April 1971, pp 65-73.

NASW Standards for Social Work Personnel Practices, Washington, D.C., National Association of Social Workers, 1971

7. Historical Background of Collective Bargaining in Social Work Private Agencies

   a. N.Y. Association of Federation Workers (Jewish Federation Agencies 1931)

   b. Social Work Discussion Club of New York City 1931.

   c. National Coordinating Committee of Social Service Employee Groups, 1935, (Clearing House for Ideas)

   d. Social Service Employees Union (SSEU-AFL) Private agencies, 2 locals in New York City and Chicago.

   e. SSEU affiliated with United Office and Professional Workers (UOPW-AFL)1939 Communist rift 1948-49

   f. UOPW expelled from CIO 2/15/50 SSEU withers

   g. New Union United Social AGency Employees (1949)

   h. United Social Agency Employees merges 1952-54 with the Government and Civic Employees Union (GCE-CIO)

   i. This then became part of AFSME, AFL-CIO

   j. Community and Social Agency Employees (private agencies) were then chartered by AFSCME into autonomous subdivisions (GSAE) "Community and Social Agencies Employees" group.

8. Union Development in Public Agencies

   a. N.Y. Home Relief Employees Association (Public agency) 1933

   b. Associations in other major cities in 1934.

   c. Converted into the American Federation of State, County and Municipal Employees (AFSME AFL-CIO) 9 public locals in 1937

   d. In 1939 split between AFL and CIO. The CIO branch became known as State, County and Municipal Workers Association (SCMWA-CIO) and was the major union of public social welfare workers.

e. In 1939 AFSME remained with only 2 public locals of social workers.

f. In 1946 the Federal Workers Union CIO, previously organized merged with SCMWA-CIO to form the United Public Workers (UPW-CIO). The CIO expelled this union on February 16, 1950.

g. A Government and Civic Employees Organizaing Committee was given the old UPW jurisdiction on February 25, 1950

h. This newest group then merged during the period 1952-54 with the private agency union "Government and Civic Employees Union" (GCE-CIO).

i. In 1956 GCE-CIO merged with the AFSME public locals so that AFSME represented both public and private social welfare agencies.

j. In 1964 the New York Department of Welfare split off from AFSME to form a new SSEU.

Source and Reading: Social Welfare Unions, a Ph.D. thesis by Paul Burke, University of Pennsylvania, 1970

Week 15 The Future of Collective Bargaining in the Public Sector

Bok, D.C. and Dunlop, J.T., Labor and the American Community, Ch. 12, "Frontiers of Substantive Bargaining", pp 342-360, Simon & Shuster, 1970

Bloom and Northrup, op cit, Ch. 23, "The Balance Sheet of Trade Unionism", Ch. 27, "Bargaining in the Public Sector"

R.E. Doherty and W.E. Oberer, Teachers School Boards and Collective Bargaining: A Changing of the Guard, N.Y. State School of Industrial and Labor Relations, Cornell University, 1967, p. 105

Shils and Whittier, Teachers, Administrators and Collective Bargaining op cit, Ch. 23, "Emerging Relationships in Collective Negotiations"

Harry H. Rains, "Collective Bargaining in Public Employment", Labor Law Journal, Vol 8, pp 548-550

A.H. Raskin, "Strikes by Public Employees", The Atlantic, Vol 201, No. 1, Jan. 1968, pp 46-51

PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN PLANNING AND OPERATIONS MANAGEMENT

PLANNING AND CONTROL

PRODUCTIVITY, OPERATIONS MANAGEMENT, AND ENTREPRENEURSHIP

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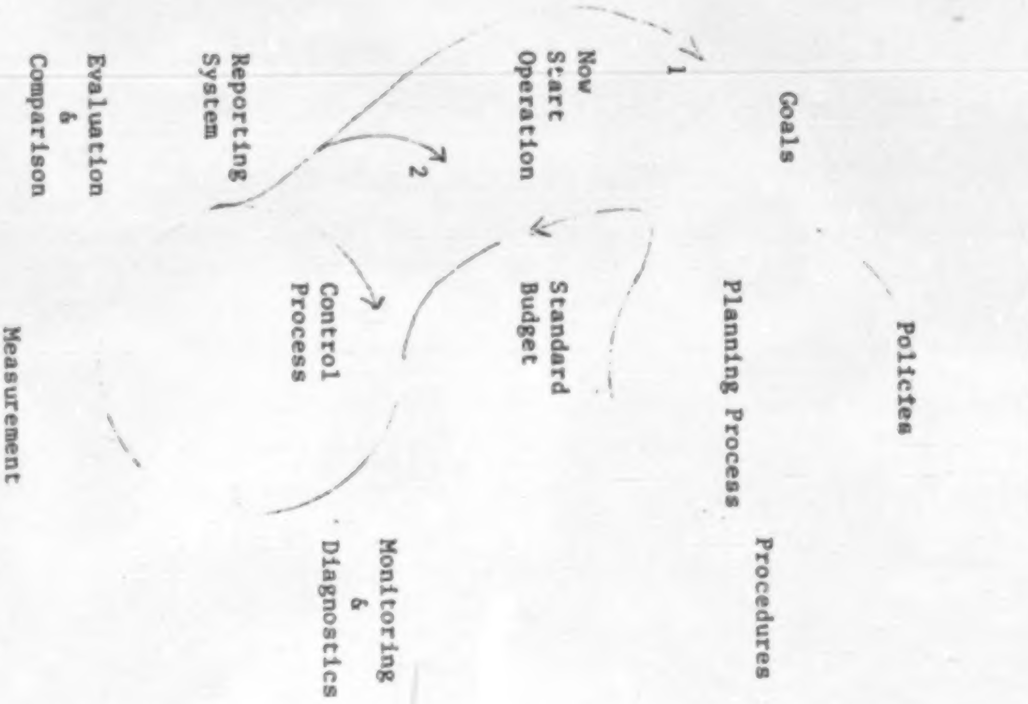
PLANNING AND CONTROL

A Conceptual View

To say that the future belongs to those who plan it is not to engage in political rhetoric or management homily. Note that the word "for" does not appear in the preceding sentence - one should not only plan for the future; the creative manager plans the future, and then invents ways to bring that desired future to accomplishment. Planning is a future-oriented decision process that must take place at all levels in any organizational structure that desires to grow, to prosper, to create, to serve, and indeed to survive both economically and politically. This is as true for the social welfare agency as it is for the profit-oriented industrial concern - for the individual case worker as for the production foreman. Thus, planning must be hierarchial and integrative, while at the same time flexible and imaginative.

Inseparable from the planning process is the function of control. Actual operations will deviate from plans, and mechanisms must be provided to measure actual performance, to evaluate performance against pre-established plans, and to change one or the other. This process must be timely, it may be intermittent or continuous but not neglected, and it should be both symptomatic and diagnostic. Emphasis must be on "why" as well as "what" for effective corrective action and/or replanning to be undertaken.

The combined planning and control process may be represented schematically in conceptual terms as:


Policies
Goals
Planning Process
Procedures
1
Now
Start
Operation
Standard
Budget
2
Reporting
System
Control
Process
Monitoring
&
Diagnostics
Evaluation
&
Comparison
Measurement

PLANNING PROCESS

This process takes place - implicitly or explicitly - whether the planning is at the aggregate program level, such as for providing services for the aged (assuming goals defined in such a way as to make this meaningful), or at the specific operational level, such as planning and scheduling intake interviews or determining how long it should take to process an accounts payable invoice. The argument here, of course, is that this process should be explicit and complete. Every step in this process is necessary and inter-related, and the neglect of any one can cause failure, disappointment, and eventual collapse of the entire organizational structure - again, either for economic or political reasons.

All too often the statement of goals is either taken for granted or stated in such imprecise and vague terms as to be operationally meaningless. Professional orientation, tradition, current political considerations, assumed economic reality, or other factors may act singly or together to cause insufficient attention to be paid to the goal-setting process. But it is here that the creative planner has the opportunity - the responsibility - to design the desired future and to plan it in the manner referred to at the beginning of this essay. This is not to say that planners should be starry-eyed idealists or unrealistic dreamers, for certainly it will not always be possible to change and to revise, but it is to say that the process should be explicit and carefully considered; otherwise opportunities will be lost and alternative courses of action will go undiscovered and unexplored. Planning and decision-making are too often concentrated on the selection among alternative actions when the real gains could come from identifying and defining additional alternatives. This is especially true when goals either are or are perceived to be in conflict, and the resolution or accomodation of such conflict appears difficult if not impossible.

Objectives must then be stated in specific and measurable terms to ensure that actions to be taken are in concert with the goals thus defined. Policies and plans - the inventions by which the objectives can be reached or approached - enable specific procedures to be developed that will change the current state of affairs toward the desired state defined by the goals. The net result is an hierarchical and integrated set of performance standards against which actions can be judged. Then, and only then, can coordinated action take place, and the control cycle begins.

A system of specific quantitative and qualitative measurements must monitor actual performance in relation to the standards, and in the same terms as the standards themselves are defined. Too often what is measured is that which is easy to measure or that which will satisfy an arbitrarily defined statistical requirement rather than the more difficult measurements necessary to compare evaluate properly. Creativity and imagination are certainly required here as well. Otherwise, accusations of smokescreen and cover-up are inevitable, but even worse, the managers themselves cannot know the extent to which actions are leading to desired results. While there may be situations where there is virtue in vagueness, this cannot be used either as an attempt to evade accountability or as an excuse to avoid the responsibility for disciplined planning. Information systems must be designed to report the results of these comparisons and evaluations in a timely and accurate manner to those persons with the responsibility and authority to take whatever corrective action may be necessary. Reporting methods, level of detail, timing, format, technology appropriate, distribution, and other matters must all be specified and adhered to. Management by exception principles are often utilized here, whereby only deviations from plans are reported, but care must be taken that zero variances are not automatically assumed to be good. Underlying conditions may well have changed sufficiently to make zero variances really mean neglected opportunity, poor performance standards, or wasted resources.

The last link in the chain presented diagrammatically above is that of either deciding that performance is satisfactory and thus re-entering the control cycle directly, or determining that corrective action is necessary and appropriate at that time. It may be that it is necessary to attempt to adjust performance so that events may be brought more in line with plans, at which point the control cycle is re-entered, or it may be necessary to go back to the planning cycle and start re-planning at whatever stage deemed appropriate. This entire process then repeats over and over again, continually adjusting and changing to reflect and to accomodate changes in the external environment, learning in the system itself, individual behavior, or some combination thereof. Management may thus "make it happen," avoid the pitfalls of management by crisis and muddling-through, and approach the desired future.

Planning by Attitude of Planner

There are several ways to characterize different views of the planning function. A particularly useful one, due to Ackoff, defines four attitudinal approaches which can be used to define any planning activity or planner himself. These characterize the process, and any specific application can be categorized accordingly, even though the planner might well deny it. That is, it may be implicit, rather than explicit, in his actions.

- Inactive - This type of planner believes that decisions are imposed by his environment, and the best course of action, he believes, is to wait for them to go away. Since fate, or other circumstances beyond his control will ultimately decide, there is no sense attempting to think very seriously about planning. An extreme case of this has been called "anti-planning;" that is, the manager consciously denies any value to planning, and refuses to commit himself or his organization to any goals or performance standards. This, of course, is hardly possible if the concept of accountability is to have any meaning. Here again is the notion of "virtue in vagueness."

- Reactive - This planner will strenuously resist change and will invariably use the tried and true solution. He tends to rely heavily on what he is fond of calling common sense, and believes that experience is really the only teacher.

- Pre-active - This planner believes strongly in the value of predicting and preparing for the future, and tends to concentrate a great deal of effort on forecasting and attempting to prepare himself and his organization optimally to meet and cope with the future thus defined. Much of what is called the management science approach to planning adopts this attitude, and great emphasis is placed on optimization and modelling.

- Interactive - This approach strongly believes that the future depends much more on what is done between now and then than on what has happened in the past. The idea is to design explicitly a desired future, and then to invent ways to bring it about, or at least to approach it as closely as possible. The attitude is that experience is not only not the best teacher but it isn't even a good teacher, because it is slow, ambiguous, biased, imprecise, and costly. Experience should be replaced with experimentation, and planning should be done so that the system may be changed by processes of learning and adoption. The battle cry is "Don't forecast the future - create it," and the firm belief is that the process of planning is it's most important product. Planning cannot be done for individuals and organizations, it must be done by them to be effective. Participation in the process is critical. The management sciences, optimization techniques, and modelling have a great deal to offer here as well, but the emphasis must be on creation rather than acceptance of the future.

One operationalization of this type of planning, developed by Nadler and called the Ideal-Systems Approach, lists the following ten-step procedure.

The Ideal Systems Approach in Brief

1. Determine the function - what it should be, not what the existing system does.
2. Develop ideal systems - three levels (theoretical, ultimate, and technologically workable) that guide you to the right system.

3. Gather information - answers to questions raised in developing ideal systems.
4. Develop alternative suggestions - where data shows that a technologically workable component cannot be used as designed.
5. Select the feasible system - the one that achieves the function as closely as possible to the technologically workable ideal.
6. Formulate the system - specify details for the system's characteristics.
7. Review the designs - keeping the ideal systems in mind, always, as the guide.
8. Test the system - does it do the job?
9. Install the system - the acid test.
10. Measure performance - establish the system's expectancy levels.

Planning by Type

Another useful division of the planning process is in relation to the feasibility or practicality of actually carrying it out.

- Normative - This type of planning focuses on what ought to be done, and must be done before formal planning methodologies can be meaningfully applied. All planning requires a normative component if it is to be goal-directed and goal-seeking, but much of which passes as sophisticated planning does not consider this explicitly. For instance, the relatively common techniques of cost-benefit analysis and cost-effectiveness analysis generally lack this component.

- Strategic - The focus here is on what can be done. Much emphasis is placed on developing sets of alternative courses of action and on designing alternative scenarios.

- Tactical - This determines what will be done, and defines the manager's job to "make it happen."

Modelling

A much used, and mis-used, word in the vocabulary of management is model, but the concept is vital to the planning process. A model is nothing more, nor less, than an abstract construction of the real world (physical environment) which can then be utilized for optimization or experimentation, with the results then being translated into actions for implementation. Since the domain of definition of planning is the future, an abstraction of the real world is necessary, since actions cannot be taken on the (unknown future) world itself. The issue is not whether to model, but how, since all human decision-making assumes some construct which will enable the prediction of results. Effective planning requires this process to be explicit, rather than implicit, and demands rigor and creativity on the part of the planner.

A very general management model states:

$$P = f(C,U)$$

which states that the performance of any system is a function of a set of controllable variables and a set of uncontrollable ones. The modelling process is concerned with determining the form of this functional relationship, so that optimal decisions may be made about the controllable variables and/or the effects of the uncontrollable ones may be anticipated, prepared for, or minimized.

This abstraction process may be no more than attempting to describe the real world, it may involve management gaming to develop solutions and understanding, it may involve formal simulation methodologies, or the model may be so well-structured as to permit formal analytical methods to be brought to bear. Models may be utilized merely in an attempt to *explain* real world phenomena, they may be developed to *predict* future events, or, most useful of all, they may enable *control* of the future.

Modelling enables more rigorous and complete analysis of the classic management question that begins, "What would happen if . . .?" The question could be completed by such phrases as (1) "plant capacity is added," (2) "credit terms are changed," (3) "our budget allocation is increased (decreased) by 10%," (4) "we change our service (product) mix," and the like. Future oriented decision-making must have answers to this question before it can be effective and efficient, and modelling provides the key. The concept is used in any case - no decision is made without this; modern management demands more formal methodologies, often involving mathematical approaches.

The model is the result of an abstraction process. It is not, should not be, and cannot be an exact duplication of reality. In general a model consists of a set of hypotheses concerning the real world that will transform events into consequences. The modelling process is a well-accepted management tool in many functional business areas, although the concept of a mathematical model is a somewhat newer development. Graphic or schmatic models such as an organization chart, a process flow chart, a Gantt scheduling chart, or a PERT network are common examples. There are also familiar examples of physical or analog models such as scale models, mock-ups, and pilot plants.

More formal planning takes this abstraction process one step further by constructing a mathematical model to give a precise formulation of the interrelationship between operational variables. The management scientist attempts to construct a mathematical model of the performance of a system as a function of the controllable and uncontrollable variables that impact on that system. The basic idea is to abstract the physical situation to a mathematical model, perform various mathematical and optimization operations on the model, and the, with the proper interpretation, translate the mathematical results back to the physical setting. The process itself is not new, as the same thing is done with schematic and physical models. What is new is the application of the power and rigor or mathematics to problems where the number of variables, both controllable and uncontrollable, is so large that the unaided human decision maker cannot possibly analyze the system in its entirety.

Mathematical models themselves may be conveniently divided into two types. The first of these types, called deterministic, is appropriate for problems where the interrelationship between the operational variables are known or are assumed to be known with certainty. Some examples would be discounted cash flow models for investment planning, linear programming, and basic economic lot size models. The second type of model, called stochastic, is applicable when these interrelationships are known only with probability distributions. In these models probability theory explicitly enters into the analysis. Examples are queueing theory models, quality control charts, and risk analyses. Both types of models can lead to exceedingly complex analyses, considering the very large number of operational variables that must be analyzed if a system is to be looked at in its entirety. However, the process is no more complex than the decision itself, and the mathematical model development will lend an explicit formulation to the problem structure.

The necessity for a precise formulation of problem objectives and constraints is one of the principal advantages of this approach even if no formal mathematics is employed. Practitioners of PERT and CPM techniques, for instance, claim that much of the advantage to be gained from these approaches comes from the detailed planning necessary to construct the models and that the mathematical manipulations are of secondary importance. The same could be said of many queueing-theory formulations where the model structure itself provides an extremely useful way to think about such flow problems even if the mathematical analysis is too complex, expensive, or time-consuming.

Using Models to "Measure" the "Unmeasurable"

A not uncommon management claim is that the modelling approach will not work in a given situation because at least one of the necessary data elements is unmeasurable, such as the value of a service performed or the cost of customers waiting time. If, however, the appropriate transformation function (model) can be determined incorporating this data element, it is sometimes very useful to "solve the model backwards" to see what value is imputed to this element by current management policies. That is, if the model shows the relationship between policy and consequences, then knowing current policy, and assuming that management believes itself to be acting at least near-optimally, will permit an estimation of the value management is assuming for the unmeasurable element. Explicit determination of this imputed value may indicate that quite different policies should be followed. While this approach will not guarantee an optimal policy, it will at least indicate the direction in which the policy decision variable should be changed, and give some indication of by how much.

Two examples will illustrate this approach, one from the field of inventory control and one from national forest management. First, consider the decision problem faced by a grocery store manager in determining how much bread he should order from his bakery supplier on a given day. Since bread is a perishable commodity, the manager must balance his costs of having bread left over at day's end (a measurable data element) with the cost of an out-of-stock if he doesn't order enough to satisfy the day's demand (a data element at least difficult to measure). If a model can be developed to determine his optimal ordering policy as a function of this unknown cost of an out-of-stock, and if his actual ordering policy is known, then the model may be solved backwards for this cost to determine the value he is imputing to this element. Knowing this may indicate a change in policy - if the value seems "too low" more bread should be ordered and if "too high,", less bread. Thus, at least change in the right direction of the policy variable may be made.

Let:

C = the unit cost of a loaf of bread

S = the unit selling price

L = the "knockdown" price, or salvage value, at which all "day-old" bread may be sold

K = the cost of an out-of-stock

P(h) = the cumulative probability distribution for demand; that is, the probability that the demand for bread will be greater than or equal to h

The technique of marginal analysis may then be used to develop a model indicating the optimal number of loaves to stock. Bread should be stocked until the marginal cost of stocking the h^{th} unit is equal to the marginal revenue. The marginal revenue is S if the unit is sold (demanded) and L if it is not, or:

$$MR = SP(h) + L \quad 1-P(h)$$

The marginal cost (MC) of stocking the h^{th} unit is:

$$MC = C-KP(h)$$

Equating these and solving for P(h) indicates that the h^{th} unit should be added to stock until:

$$P(h) = \frac{C-L}{S + K - L}$$

If K were known, the optimal h could be determined. But assume K is not known, but the actual ordering policy (value of h) is. The model above may then be solved for K to check for "reasonableness," and policy adjustments made.

To illustrate, assume S = 25, C = 19, L = 0, and the demand is normally distributed with a mean of 300 and a standard deviation of 50. Further assuming that the manager orders the amount he thinks he can sell (that is, the expected value of the demand distribution, or 300 loaves, the normal equation may be used to compute:

$$.5 = \frac{19-0}{25 + K = 0}, \text{ or } K = 13$$

This means the manager's current ordering policy is imputing a cost of 13 cents to the cost of an out-of-stock. When faced with this explicitly, he may decide this to be too high or too low, but at least he knows in which direction to change his ordering policy.

Much more briefly, consider the problem of a manager dispatching crews of fire-fighters when he receives a report that a forest fire has been detected. He must balance the costs of the fire suppression forces (a measurable data element) with the value of the resources destroyed or to be destroyed by the fire. The value of an acre destroyed by fire is very difficult to measure, as it must consider timber values, recreation value, grazing value, scenic value, watershed value, and perhaps some others. The manager needs a model describing two "laws" of system behavior: the growth rate of a free-burning fire, and the effect thereon of suppression forces of various size. With this he can then determine the optimal size suppression force to dispatch so that the sum of the two types of costs may be minimized. However, the solution will clearly be a function of the value of an acre destroyed by fire - a difficult to measure quantity. With the model, he can, however, determine the imputed value for this variable based on the policies he is forced to adopt by current budgetary constraints. If actual current policy indicates a value far too low to be "reasonable," he is then in a much stronger position to argue his case for increased support with the budgetary authority, or, conversely, if the figure is too high, the budgetary authority will be on stronger ground to reduce allocations or at least to effect reallocations to other programs or activities.

The analogy to other government spending is straightforward; i.e., services to the aged, crime prevention, or child welfare services. Rather than impassioned rhetoric, what is needed is attempts to determine the appropriate transformation functions (models) so that determinations can be made on whether or not a particular change (reallocation of money, manpower, or whatever) will cause system change in the direction of desired goals, or equally important, what the effects will be of not taking a particular action.

Accountability Revisited

A quotation from M. Shapira says it well. "When a program is fully accountable, those responsible for it can show not only that it accomplishes is done with fiscal economy and that it is effective, but also that it does what it does better and less expensively - given quality and quantity levels - than any other program could."

It is only with the approach and attention to planning discussed herein that such a result is possible.

Some Specific Planning Models

A. Resource Allocation - Mathematical Programming

Mathematical program models are concerned with the efficient allocation of scarce resources among competing activities. If the total available amount of the various resources is constrained and there are various ways to allocate these resources to the activities that may be undertaken, and if it is desired to optimize some function of the activities (such as minimize costs of production or maximize profits resulting from manufacturing), an analysis of the decision problem by mathematical programming may be considered. In the case where all the relationships can be stated as linear (straight-line) functions, the linear programming model may be employed. This model has been successfully applied to such diverse problems as aircraft, maintenance scheduling routine; hospital menu planning; advertising media selection; gasoline blending; capital budgeting; multiplant, multiwarehouse production and transportation scheduling; inventory control; manpower allocation; and many others. CPM analyses are also based on linear programming methods. Allocation of resources both among welfare programs and within a given program may be rationally planned with such models.

By far the most commonly used model in this area is the linear programming model. Applications are many and varied in virtually all management functions where there is concern for planning how to make the best use of scarce resources in situations where there are many alternative uses. Other mathematical programming models are available in certain situations where some of the assumptions of the linear programming model are violated. Stochastic models can be used when some of the input data are known only with probability distributions, and certain quadratic programming models can be used when the linearity assumption for the objective function is not reasonable.

So-called dynamic programming models may be used when a businessman is concerned with making plans now to maximize returns from future events, the outcome of which are not forecastable with certainty. Perhaps the most common business application is in inventory analysis where a program must be developed to balance production ability, inventory levels, and uncertain sales requirements at minimum cost. In certain applications where linear programming could otherwise be used, it is necessary to restrict the optimum program to be stated in terms of integer-valued variables only. So-called integer programming techniques have been developed to handle certain classes of these problems.

B. Critical Path Methods - Project, or Program, Management

Although these techniques were originally developed for the planning and control of large, complex industrial and defense projects, they have proved equally valuable for helping management set and keep project schedules on smaller-scale programs. They have been sucessfully applied to such diverse endeavors as new product introduction, house building, book publishing, construction of a supermarket, theatrical production, computer installation, preparation of legal briefs, and many others. It is often assumed that large, expensive computer facilities are required to implement these techniques, but in point of fact reasonably large projects - consisting of up to, say, 200 separate activities - can be readily analyzed by manual computation. Many users claim that most of the advantages of employing such planning and anticipatory control methods come from the carefully detailed planning necessary to construct the network itself, which is really a schematic model of the entire project, even if no formal mathematical analysis is carried out. The model shows the many interrelationships between the project's individual activities in such a way that potential trouble spots can often be highlighted in advance by simple inspection of the network; potential deviations from plan can be significantly increased; and the possibility of extensive cost overruns can be reduced.

The underlying mathematical structure, which is of the linear programming type, does permit extensive computational manipulation to provide management with a great variety of planning and control information. Predictions can be made on estimated schedule completion dates; resource allocations can be made to project activities to minimize costs subject to schedule dates; manpower can be planned and scheduled; and critical activities can be identified for special management attention. As with most mathematical models constructed for management problems, the primary use is to provide guidelines for management decision making, but in certain applications they are true optimization models in that they can determine the best course of action subject only to stated operational constraints.

Some problems that have been encountered in the application of these techniques are the following: (1) Psychological problems have resulted from resistance to being forced to conduct such explicit initial planning and replanning, as well as resistance to the application of such a dynamic control system; (2) cost analyses have shown these procedures to cost as much as twice the cost of more conventional planning methods; (3) top management backing and understanding are vital - the system is neither automatic nor rigid; (4) the work breakdown is usually not equivalent to the existing organization structure so that interface and coordination problems develop; and (5) established precedence relationships may not be real but merely established for convenience or reduced cost.

The benefits of successful application are impressive.

1. All activities necessary to meet end objectives are identified and planned in advance, and there is better visualization of the individual tasks to be accomplished at all organization levels. All personnel can see where their contribution fits into the whole.
2. Planning and performance are closely associated.
3. Control procedures can be pinpointed and are anticipatory in nature.
4. Interim schedule objectives and meaningful milestones can be established and coordinated.
5. There is a clearer delineation of responsibilities and results expected.

6. Resource management and decision making are improved. Optimal tradeoffs can be made.

7. Outcomes in terms of time and costs can be predicted with reasonable precision.

8. Participation in initial planning is increased, and flexibility in replanning is provided.

9. Ultimately, total project costs can be reduced and schedule overrruns avoided by proper planning and control throughout the duration of the project.

C. Risk Analysis for Investment Planning

Stochastic models have been developed under this general heading primarily to analyze investment opportunities where costs and payoffs are uncertain. The basic idea is to apply Monte Carlo methods to an appropriately formulated return-on-investment model.

When a businessman says he is taking a calculated risk, rarely does he mean that he has really calculated anything particularly interesting about the risks he is facing. It is usually nothing more than a justification for "seat of the pants" decision making. Since most risk notions can be stated in the formal language of probability theory, these techniques provide a method to incorporate risk measures explicitly. Basically, precise measures of the uncertainty or variance of future payoffs and rates of return are provided for the decision maker, whereas traditional techniques were concerned only with expected values.

D. Queueing Theory

Many operational problems in manufacturing and elsewhere can be formulated and solved with a certain type of stochastic model called a queueing, or waiting-line, model. Such problems are characteristized by an input population of discrete units, called customers, who require service at some facility, the design of which is typically under management's control. Because of the random nature of customer arrivals to the facility, and because the time to perform the service is not perfectly predictable, a queue or waiting line forms. The behavior of this queue as a function of the service system design is of considerable interest. Management can often use these mathematical models to optimize the design of the service system in the sense of cost minimization, or optimization of various probabilistic measures.

A service system consists of one of more facilities which can provide service, the duration of which can be described by a probability distribution. Customers arrive at the service system from the input source according to another probability distribution and may or may not enter the system to join a queue (which could be of length zero) awaiting service. The service facilities select customers from the queue by some priority system and provide the service, after which the customer leaves the system.

Some examples of problems that can be formulated and solved with queueing models are shown in the following list, with their types of customers and service facilities.

Problem	Customers	Service Facilities
Machine breakdown maintenance	Machines	Repair crew
Supermarket checkout	Housewives	Checkout counters
Hospital clinics	Patients	Doctors
Airport design	Airplanes	Runways
Accounts payable	Bills	Accounting department
Tool crib operation	Mechanics	Clerks
Assembly line design	Units of production	Work stations
Insurance adjusting	Motorists	Claims adjusters
Port development	Ships	Docks
Organization design	Subordinates	Superiors
Bank operations	Customers	Tellers

Management would typically be interested in controlling some or all of the characteristics that are functions of the design of the service system, the rate at which it can be made to operate, and its scheduling. They are also functions of the arrival rate, but this can usually be influenced by management only in the long run (say, by advertising or market development activities). These operational characteristics are as follows: length of queue; number of customers in the system; waiting time for customer; total time of a customer in the system; idle time of service channel; percent of balkers (potential customers turned away); number of customers discharged per unit time; probability a customer will have to wait longer than some given time period.

Theoretically, the decision maker would like to so design and schedule the system that total costs would be minimized or profits maximized. This, however, requires the determination of the "costs of waiting," which are extremely difficult to evaluate in many operational problems. In such cases the decision maker usually wishes to design and schedule to keep some or all of the previously listed chacteristics within acceptable limits.

E. Business, or Management, Games

Business games are a special type of simulation, where actual business decision-making situations can be compressed into short time spans for training and development and for experimentation and policy determination without risk. Some are classified as top management games; others concern themselves with only one or more functional areas; all are based on the concept of constructing a model of the business situation under study and moving it through time so that future decisions in the simulated environment are based on feedback in the form of operating results from prior decisions.

The familiar case study is a special example of a static business game where decisions are made at only one point in time. More realistically, these games are dynamic in that a set of decisions at one point in time is influenced by what happened before and in turn influences subsequent sets of decisions. A particular game may be deterministic in the sense that there is a single certain outcome for any particular set of player decisions, or it may be probabilistic in that there are several alternative outcomes. It may be predetermined in that its outcome, either deterministic or probabilistic, for a particular simulated company at any stage is determined as soon as that company has chosen its strategy, or it may be competitively interdependent in that one company's outcome depends on the strategy of others. (That is, the competitition is for the same market, and strategies regarding price or advertising will trigger competitive reactions.)

Proponents claim that this kind of simulation exercise can have great benefit by forcing involvement on the part of the participants without the risks of real-world experimentation. Such games are said to re-emphasize for executives the need for coordination, communication, and control. It is also asserted that they provide an additional intuitive knowledge of the decision-making environment in which a firm operates and force the systems point of view on the participants.

If these simulation games are rich in the sense that they realistically describe a business environment, there is also little doubt that they have been enthusiastically received by many educators and businessmen. In the abstraction process they are a step closer to the real world than other types of simulation in that, through the feedback mechanisms provided, the human decision maker remains a part of the environment. Enthusiasts also claim that there is much to be learned about the behavioral aspects of the decision-making process by observing the game participants in action. Such knowledge could be gained in the real world only with considerable risk and expense, if at all.

F. A Summary Comment

In considering any of the above, or any other formal modelling process, the question is not "Should we use these techniques?," but, recognizing the real world complexity, "Do we have anything better?" The question is not "Do the models represent reality?", but "Are there any better ways to handle the assumptions, complexities, interrelationships, etc?"

A Quick Look at the Computer's Role

While the concepts and approaches discussed here may be readily understood without the utilization of a computer, in most cases application will require such facilities. Insofar as education requires actual experience with these planning models, the sutdent will require access to a computer. Real knowledge and appreciation of the techniques can only come from actually working with the models to gain understanding of the power, sensitivity, and limitations of the approach. Virtually every University and College computer facility will have canned programs for many of these models, or they are available from the computer manufacturers. The computer, thus, should play an integral role in the process of learning approaches to management planning and control.

Note that the computer is really adding a new capability to the manager here in the sense that he can now do things that were impossible without the computer. For instance, even a medium-sized linear programming model for corporate planning just could not be solved in any other way because of the sheer number of calculations involved, so the computer really do things that man cannot. Most of the current use of computers is for what might be called data processing jobs - pyaroll, sales analysis, accounts payable, inventory record keeping, and the like - jobs that if necessary could be done by hand, although perhaps not as efficiently, cheaply, quickly, accurately, or whatever. Much more exciting, in terms of payoff to management, is to use the computer for the type of task discussed here - the analysis and solution of planning models, because these are jobs that only the computer can do. Management's horizons can be broadened and its capabilities can be extended, and, if done by properly trained and sensitive managers, the overall performance of the management task can be significantly improved.

A caution, however, is in order. The applicability of mathematics to management no longer requires proof, but it is well to keep in mind a warning from Henry Scheffe in his book, Analysis of Variance (John Wiley & Sons, Inc., 1959).

> This (subject matter) is not a cookbook of formulas and rules to be blindly applied and the answers ground out. It is a subject matter requiring the highest order of invention, ingenuity, and imagination to successfully tackle operational problems.

Scheffe was writing about certain statistical techniques, but the point is equally well taken for the entire field of management science.

Some Further Thoughts on Control

The control system should "encourage" good planning and good execution. The goal should be to effect control before deviations occur, or at least before they become significant. Toward this end controls should be diagnostic - they should be designed to seek causes of deviations and to indicate directions for change in desired directions. They should also be symptomatic, so that trouble can be detected before more serious problems develop. Control allows an organization to function pur-

, and as it is the essence of coordination.

Many of the problems of applying the control process come from the fact that people are being controlled. They have many reasons to resent controls, as it is often interpreted as a reflection on their abilities. The very word "control" has unpleasand connotations growing out of experiences, stemming from childhood on up. It implies rigidity, authoritarianism, power and force, and even hypnosis and voodooism. A brief list of such reasons should help the manager in constructing better control systems.

1. The individual fails to accept the organization's objectives, they may be in conflict, or he may not even know what they are.
2. Performance standards may be set impossibly high, or they may be "planned" by people out of touch with the real world environment.
3. Measurements may be inaccurate.
4. There is a natural tendency not to want to face unpleasant facts.
5. Applications of controls may be considered illegitimate - that is, done by "outsiders" from the "home office" or by central staff personnel.
6. There is conflict between organizational goals and social goals.

But controls are an essential part of the management process, and the effective and efficient manager must design systems to elicit positive responses. Some suggestions follow:

1. Take a dispassionate view and treat everybody the same. Seek a cure rather than a culprit.
2. Develop mutual interest in achieving objectives by encouraging participation in the planning and standard setting process.
3. Be aware of personal needs and social pressures.
4. Explain the control measures used and to be used.
5. Allow flexibility in the process, but not so much that any deviation can be explained away.
6. Keep corrective action within the recognized chain of command, and administer the controls sensitively.

There are several areas where controls must be applied, and different disciplines (not discussed here) are appropriate. For instance,

1. Quantity - an extensive literature is available on productivity analysis, work measurement, and inventory theory which would apply here.
2. Quality - much behavioral science theory, as well as a wide variety of statistical techniques, are relevant in this area.
3. Time - of increasing interest at management levels and for managers now, and of course of continuing interest at lower levels. A great deal of practical and theoretical scheduling theory exists.
4. Cost - the province of industrial engineering and accounting, but obviously of interest and importance to all managers.

5. Budget - again, in the area of accounting, but the effective and efficient manager must understand, participate in, and creatively utilize.

Certain aspects of numbers 1, 2, and 3 above are discussed at more length in the Productivity, Operations Management, and Entrepreneurship section of this project.

This section is concluded with a brief look at an (electrical engineering) systems description of the control process, which may give additional insight and introduce useful technology. A business organization or industrial enterprise may be viewed as a system composed primarily of communication and control devices. Analogies may be made with electrical systems or biological systems and the field of cybernetics has been developed to deal with these structures - a basic construct of which is feedback control theory.

Information consists primarily of a sequence of signals from a sender to a receiver along some kind of channel - a simple example is the telephone system. But there may be noise in the channel, so that certain signals get drowned out or distorted, or there may be leadage and other losses affecting the transmission of information. Any such system has a goal, or a desired state, both at the overall level and the individual performance standard level. Every system is subject to certain disturbing influences, which cause there to exist a difference between the actual state and the desired state. This difference, called error, must be sensed and measured. The central action to be taken depends not only on the magnitude of the error, but also on its rate of change. There are time lags, between the disturbing influence and the disturbance, between the disturbance and the corrective action, and between the corrective action and the response. The simple thermostat provides an oft-quoted and easily understood example. Examples, in the management of organizations are are more complex, but much understanding might be gained from formulating systems in this way, and insight may be obtained that will enable more effective and more efficient management practice.

Bibliography

There are many management textbooks that will have extensive discussions of the planning and control process. Many, if not most, of these, however, will be institutional in nature, and difficult to operationalize. The best references for the approach presented here are two books (1 and 2) by Russell Ackoff, published by John Wiley and one (3) by Gerald Nadler, published by Richard D. Irwin.

1. A Concept of Corporate Planning
2. Redesigning the Future
3. The IDEALS Concept

There is also an endless variety of case study materials and management games that emphasize the planning and control process. These may be found in the general management texts, specialized case texts, or through the Intercollegiate Case Clearing House, Soldiers Field, Boston, Mass.

The management science techniques and approaches are well described in many textbooks as well, and the specific selection of text will depend heavily on the depth of presentation desired and the mathematical level of the student. Perusal of the library subject index will identify many sources. There are several professional journals that regularly carry both theoretical and applicational articles on this subject. A few, in more or less increasing level of mathematical sophistication are:

1. Harvard Business Review
2. California Management Review
3. Administrative Science

4. Journal of Business
5. Transactions of the American Institute of Industrial Engineers
6. Management Science
7. Journal of the Operations Research Society of America

The Institute of Management Sciences, the major professional association in the field, has a College on Planning, to which serious students of this subject matter should belong.

Mention should also be made of the extensive libraries of computer programs available at University Computer Centers for the application of the methodologies discussed here. Often these will be for use with batch processing, but increasingly interactive programs are available so that the benefits of time-sharing can be obtained and the user need only a terminal and a telephone. While ease of access and financial arrangements will vary widely from institution to institution, no insurmountable obstacles should exist for those wishing to apply or experiment with the type of model discussed here.

Three general text and reference books out of many available, which cover the techniques, approaches, and philosophy relatively completely, and may be of significant value to the generalist are:

1. Hertz, D.B., New Power for Management, McGraw-Hill.
2. Richmond, S.B., Operations Research for Management Decisions, Ronald Press.
3. Miller, R.W., Schedule, Cost, and Profit Control with PERT, McGraw-Hill.

PRODUCTIVITY, OPERATIONS MANAGEMENT, AND ENTREPRENEURSHIP

Productivity and Operations Management

The management of any operating system must be concerned with increasing the productivity of the resources - men, materials, machines, and money - for which he is responsible. The concern here is with planning and managing on a more day-to-day basis. Presented here is a compilation and brief description of some of the more important topics with which operating managers ought to be knowledgable, whether the system is product or service oriented, profit-making or not.

A. Work simplification and methods engineering. "Work smarter, not harder" is an oft-quoted goal of work simplification programs where the objective is to find the most economical way of performing the various operations, standardizing the operation, and reducing them to written standard practice. While the techniques and approaches were originally developed for use with direct factory labor jobs, they have subsequently been successfully and profitably employed with indirect labor, and in offices, hospitals government, mail order houses, banks, department stores, farms, any many other types of organizations. There are two levels of analysis commonly employed. The first, called process analysis, or operations analysis, consists of flow-charting a particular task in terms of operations, transportations, delays, storages, and inspectors. This macro-level analysis results in a graphic model which can be utilized to see how to eliminate, simplify, or combine operations for greater productivity, to improve existing layouts or design new ones, to reduce materials handling, to reduce or eliminate delays, and to minimize transportation requirements. Activity charts and man-machine charts are other techniques directed toward increasing operating efficiencies, reducing idle time, and reducing costs.

The second level of analysis is to design the actual work methods to be used for a given operation, and is generally done at a much more micro-level. Jobs are defined in terms of extremely small work elements in building-block fashion, and then well-established principles of motion economy can be employed to redesign the job for improved productivity.

The principal focus is on redesigning jobs so that the best methods are employed, workplaces are optimally arranged, and tools and equipment are properly utilized. The industrial engineer will question everything about the job being studied. What is done? Purpose? Why? Who does it? Should someone, or something, else do it? Where is it done? Why? When? Why? How is it done? Why? While these may well be negative human relations implications of work simplification programs because of fear of job loss, fear of having to work harder for the same pay, fear of having the job downgraded to a lower pay classification, and a general resistence to change, well-trained, sensitive, and fair managers can and do obtain significant results from the application of these techniques without significant problems.

B. Work measurement and output standards. Once a job has been designed and standardized, it is then necessary to estimate the proper time required for performance so that adequate controls may be established, reasonable and accurate schedules prepared, and possibly so that incentive compensation plans can be directly related to output. The purpose is to determine the planned, or normal, time to do a job, called the standard, which can then be used also for evaluation, pricing, budgeting, and an input data to more sophisticated management science type planning models. There are four basic procedures, all based on sampling theory, in wide use for these purposes - the choice of which to use will depend on the particulars of a given situation and the purposes for which the results are intended. The worker being measured (and labor unions) often object to these procedures because judgment is required at various stages of each of the procedures, but, again, well-trained and fair analysts and reasonable managers can overcome these objections. In any case, the job must be done before any organized planning can be accomplished, and it is no doubt better to proceed explicitly rather than rely on guesses and implicit assumptions.

The first of these is merely to use historical actual data on past job performance to prepare standards for future performance. The problem, of course, is that any errors or biases in the past data will be built in for the future, but this may not be too serious in certain situations. The second procedure, called time study, utilizes actual stop-watch studies of the operations. A number of cycles of the operation are observed and timed, actual performance is rated to adjust the observed times to normal times, and then allowances for fatigue, personal time and unavoidable delays are added to compute the standard. There are a great many variations of these basic steps in wide use, and the interested reader is referred to the references at the end of this section for details. The third procedure is to utilize so-called pre-determined data systems, of which there are several in wide use. The basic idea is to describe the job in terms of the same sort of basic motions, or building-blocks, utilized in the methods design phase. Standard times have been determined for each of these basic motions by expert industrial engineers, so the construction of the standard time consists of assigning the proper times to each of the basic motions and then adding them up in the configuration determined by the methods design. Fourthly, work sampling techniques may be utilized, consisting of observing the actual work at a relatively large number of randomly chosen times and then computing an estimate of the percent of the total time devoted to each activity from the relative frequency with which that activity is observed. These techniques are particularly well suited for studying indirect labor, clerical workers, and para-professional or professional employees.

C. Human engineering - ergonomics. The field of human engineering has twin goals - the improvement of work, of equipment, of working methods, and of the working environment, and the improvement of human welfare by making work easier, less tiring (fatiguing), more dignified, less hazardous, more healthful, and less boring or monotonous. The first goal is similar to that discussed in A. above, but the second incorporates contributions more directly from the behavioral and physical sciences as well. A basic characteristic of the approach is the assertion that minimum cost criteria as often defined by engineers and businessmen are inadequate, and that criteria are needed that take into account the multi-dimensional character of job design and include relevant longer term changes for economic, engineering, organizational, social, psychological, and physiological costs as well.

In complex man-machines systems, where man's surveillance function may be all-important, surroundings and workplace layout can be very important. Interest in spare travel has also accelerated developments in this field. But major improvements in productivity and worker welfare can certainly be obtained in much more mundane environments, and the approaches have been successful in a wide variety of work environments, including offices, the post office, factories, transportation vehicles, including cars, trucks, buses, trains, and airplanes, and many others. Some of the principal subject areas are:

1. Light and seeing to determine optimal illumination levels
2. Visual displays
3. Sound, hearing, and noise
4. Atmospheric conditions
5. Shaping and coding of knobs, cranks, handwheels, etc.
6. Anthropometric data for the design of workplaces, seat design, the location of controls, etc.

There are many research methods in use, including:

1. Operator opinions
2. Work sampling
3. Memo-motion studies - work sampling with a camera
4. Process charting
5. Micro-motion studies - high speed motion picture cameras with slow playback
6. Link analysis - study of links between men and machines
7. Cyclegraphs and chronocyclegraphs - photography
8. Force platforms
9. A great variety of statistical procedures.

D. Value analysis and value engineering. The methodology of this field is to improve productivity and reduce costs by focussing on material rather than labor inputs. Basic questions and raised concerning function of a material or part, alternatives for the function are developed and evaluated, and improvements effected. Organized and relatively rigorous procedures have been developed, and major cost reductions reproted in a variety of organizational settings.

E. Facilities planning. More efficient use of capital resources is an item of major importance to every operating manager committed to increasing productivity. There are several important problem areas, solutions to which should be in every manager's repetoire. First, consider the location of physical facilities - plants, warehouses, hospitals, crisis centers, retail outlets, and the like. A variety of management science models have been found very useful in this area, where objectives are stated in terms of maximizing profits, maximizing service, minimizing costs, or some combination thereof. Some of the more commonly applied are linear programming, regression analysis, weighted ratio methods, and center of gravity approaches. For the more subjective factors influencing such decisions, a wide variety of check lists and other organized approaches are available, the specific choice of which depending on the location problem at hand.

Layout of equipment within a given facility is another area where significant productivity improvements can often be accomplished. Techniques for improving layouts range from flow charting and the use of templates and other physical (scale) models through travel charting computational techniques to quite sophisticated management science models, including mathematical programming and a great variety of heuristic computational methods. Another area worthy of study by operations managers is scheduling. Here techniques such as queueing theory, branch and bound methods, Gantt charts, and PERT/CPM have been found extremely useful.

The extremely broad area of investment analysis and expendituretue justification shoudl have an important place in the education and training of any operations manager. While in private industry it is common to state objectives in terms of maximizing profit or monetary return on investment, many of the same techniques are equally applicable in the public sector where objectives are more likely stated in terms of improving service or reducing costs. And in any case, if "a penny saved is a penny earned," the public agency can equally well think in terms of maximizing earnings. Every organization should have cost reduction - with no sacrifice of service or quality - as one of its major electives. The other side of this coin, of course, is improving service or quality at the same cost, or, justifying higher costs on the basis of these improvements. Many of these same techniques can be modified to analyze such problems, and cost-benefit and cost-effectiveness analyses have been developed specifically for such purposes.

In brief review such as this, it is impossible to describe these techniques and models in any detail, but a list of at least some of those that should be understood by operating managers is:

1. Payback period
2. Discounted cash flow
3. Net present value
4. Present worth total costs
5. MAPI (Machinery and Allied Products Institute) formulas
6. Return on investment
7. Risk analysis and risk profiles
8. Payoff matrices - uncertainty models
9. Utility theory

F. Quantity control. A huge body of literature, stressing both theory and practical application, has been developed to deal with the problems of inventory control and production scheduling. These are the practical, day-to-day, operating problems faced by any manager responsible for the performance of work. Any inventories, whether purchased or manufactures, whether raw materials, work in process, or finished goods, and whether acquired for use or fur resale account for a major investment for virtually any organization, and usually represent a very large percentage of the total assets employed. Obviously, appropriate controls are vital if an operation is to run efficiently, and the cost reduction possibilities are large. Again, listed here are specific topics of importance in education for and practice of operations management, whether in the purchasing area or in the production of goods and services. The interested reader is referred to the bibliography at the end of this section.

1. Determination of relevant costs - out-of-pocket and foregone opportunities for profit.
2. ABC analysis
3. Economic order quantities, or economic lot sizes
4. Reorder points and safety stock determinations
5. Periodic review systems
6. Demand analysis
7. The handling of lead times
8. S,s inventory systems
9. Quantity discounts
10. Service level determinations and the cost of an "out-of-stock"
11. Record-keeping and transaction recording
12. Computerized methods and models for all of the above.

Production scheduling systems are of three basic types, and the well-trained, effective, operations manager should have some exposure to the structure of each, and the appropriate methods and models for analysis and decision-making.

1. "Continuous production" systems, where each unit requiring service (or manufacture) goes through essentially the same sequence of operations, and the process is repeated more or less continuously. The familiar production line is a typical example.

2. "Job shop" systems, where each unit may pass through a different sequence of operations, and production is ordinarily done only to specific customer order. Rather than utilize assembly lines, the facility is usually laid out in separate departments, each performing a specialized function. The hospital provides an example.

3. "One-time only," or project systems, where the job to be done is undertaken only once, or if more than once, at least not concurrently. PERT/_PM are the techniques usually employed for scheduling and resource allocation. The introduction of a new product or service, the installation of computer facilities, and the building construction project are typical examples.

G. Quality control. Education and training in quality control should emphasize both behavioral and statistical concepts. There are many motivational programs and devices developed by industry and government, that, when properly managed, have brought great improvements in the quality of an organization's output. The "zero defects" program is probably the most well-known, but also various types of visual displays, communication programs, prizes and award programs, and suggestion systems have proven very helpful.

The statistical approaches are of two basic types. The first, called control chart theory, is applicable when the objective is to maintian current control of a process when it is already in a state of statistical control (i.e., the process parameters are stationary). It can be applied to any input or output variable that can be measured, such as a product in process, raw material, cost, accident rate, labor turnover, absenteeism, machine breakdown, error rate, and so forth. Variation of a variable will occur in any process over time, and the issue is to determine whether that variation is stable, and (generally) hence acceptable, or unstable, and hence unacceptable, indicating a need to take corrective action. That is, the question is whether the variations are due to chance (random) causes, or are they due to assignable causes that should be corrected. Measurements may be of the variables type, where the variable is actually measured, or of the attributes type, which merely classifies good-bad, or accept-reject. Attempts are made to detect the presence of these assignable causes as quickly as possible (subject to economic constraints), so that corrective action may be instituted rapidly. The principal detection technique is the control chart, and the relevant statistical theory is that of sampling theory, the theory of runs, hypothesis testing, and goodness-or-fit testing.

The second statistical approach, called sampling inspection, is used either when statistical control has not been established or when the process has already passed any control point. Examples are incoming raw materials or supplies, and finished goods ready for shipment. The problem is to make decisions regarding the acceptance or rejection of a lot or batch of parts or supplies. Comparisons are made between the value of some measurable variable - again, variables or attributes measurement- associated with the lot and a previously established standard. While 100% inspection is sometimes done, this is usually accomplished by means of a sample. In its simplest form, a sample of size n, say, is taken from the lot and inspected. If there are less than or equal to c defects in the sample, the lot is accepted, and if more than c defects are found, the lot is rejected. As with any sampling process, there are two types of error, obviously in conflict, that can be made - accepting a bad log, or rejecting a good one. The probabilities of making each of these errors are dependent on the values of n and c, and the true percent defective in the lot. The objective is to construct a sampling plan (specification of n and c) to minimize these subject to the economics of inspection and of the production processes. Sampling theory, hypothesis testing, and sequential analysis are the relevant statistical issues.

While these techniques have been most commonly applied to manufacturing operations, there are many successful applications possible in other fields. Some of these are: error checking in application procedures, freight waybill processing, accounts verification, claims analysis, and the like.

H. Queueing theory. Methodological approaches developed from queueing theory are more fully discussed in the Planning and Control section of this project report, but are worth mentioning again here because of their value to an operations manager in designing and operating service facilities. Such techniques may aid in the management of hospital emergency rooms, crisis centers, claims offices, benefits processing centers, computerized information systems, clinics, and many other service centers. Here again, as in E, F, and G above, the computer should play a major role in the educational process, as there is no substitute for actually working with these models to explore sensitivity and to understand their limitations as well as their value.

I. Forecasting. Central to the effective and efficient management of any operating system is the ability to develop accurate and timely forecasts. Usually demand, or sales, forecasts for the product or service are the most important, but other types of forecasts may be desirable as well, such as for technological developments, for cost patterns, or for shifts in demographic characteristics. There are three basic approaches, with a great many variations of each.

1. Subjective methods. Relatively formal methods based on Delphi Techniques have been developed to deal with situations where no past data is available, or where it is assumed to be irrelevant. They are essentially consensus techniques based on the collective opinions of a panel of experts, successively refined by iterative procedures. Ranking methods and a weighted average of qualitative opinions are also used, and it may be possible to develop forecasts by analyogy with similar situations. These subjective methods are most commonly used for technology forecasting and for sales forecasting for new products or services.

2. Time series analysis. These methods, ranging from simple averaging over time to regression analyses with time as the independent variable and quite complex exponential smoothing with trend, seasonal, and cyclical corrections, are based on analyzing past data on the variable to be forecast, normally sales in dollars or units. They are best suited to relatively mature products with relatively stable demand patterns, but can give good approximations in more variable situations. They do depend, however, on the availability of past data, as it is the patterns demonstrated in the past that are projected into the future.

3. Econometric methods. The approach here is to try to find relationships between the variable being forecast and, say, general economic indicators or other environmental variables. If a close relation between the variables can be demonstrated to have existed in the past, it is then assumed that the relationship

will continue into the future. Thus, if past history shows that company sales are closely associated with, say, gross national product and new housing starts, then future company sales are projected to have this same relationship in the future. Forecasts are available from a number of sources on the economic indicators (independent variables), and the past relationship established is used to forecast future company sales (the dependent variable). A great variety of general economic indicators are used as independent variables, depending on the specific situation, as are other variables such as demographic measures, income levels, traffic patterns, measures of competition, and the like. Regression analysis, single or multiple, linear or non-linear, is the usual statistical technique, and such forecasts are generally better at some aggregate level than for individual products. Statistical measures of forecast errors are also available from such techniques, so that confidence interval statements can be made.

Forecasts, and forecasting methodology, should be continuously reviewed, seeking ways to improve them, to reduce errors, to remove biases, etc., by rigorous comparisons of actual results and those forecast. All too often old forecasts are quickly ignored or discarded, but potential embarrassment must not be allowed to stand in the way of improved forecasting. So much else in organizational planning and decision-making depends on forecasting future events that major effort should be devoted to doing the best job possible. And useful techniques are available - this is not the place for guesses, unsupported claims, or non-rigorous thinking.

Entrepreneurial Management

Medium-sized and large business organizations have rediscovered entrepreneurship, and much is currently being written and spoken about redesigning and restructuring organizations to create or simulate the atmosphere and risk-reward structure of the independent entrepreneur within the larger organizational structure. Concepts such as venture management and profit center decentralization are much in vogue. M. Shapira writes eloquently of the need in social welfare organizations for this same entrepreneurial behavior. What is meant here is not the confidence man, fast-buck artist, or wheeler-dealer connotations sometimes attached to the word entrepreneur, but rather the identification with boldness, creativity, risk-taking, dedication, and drive. The characteristic of dissatisfaction with the status quo and the vision and energy to effect change are the important issues - the manager as a change agent. Uncertainty and confusion which mean problems for the bureaucrat mean opportunity to the entrepreneur. Such men are not prisoners of old ideas and established practices, but rather are continuously seeking out new methods and procedures and new plans to sqeeze maximum benefits from resources always too limited. These are the "make it happen" managers, rather than those who watch it happen, or wonder why it happened.

Much experience and some theory have been combined to produce substantive material that can be and should be incorporated into educational and training programs for both current and potential managers. While this material primarily has been developed from and for the private sector, direct analogies of certain aspects are possible with welfare and other non-profit organizations, and can be useful to promote creative, effective, and efficient program management.

A fundamental concept of entrepreneurial organizations is a committment to growth - a belief that what they are doing - product or service - can and should be done more. They will change, adapt, and restructure to create such growth, and to accomodate its effects. Change is a way-of-life. Every product or service an organization provides, and indeed the entire organization itself, goes through a growth cycle, often called the product life cycle. Each stage in this cycle involves different problems, different issues, and different management strategies for resolution and movement forward. Without understanding and creative leadership an organization may stall at any one of these stages and never realize its full potential or provide for its various constituencies the satisfactions and rewards they desire. A basic premise, where entrepreneurial management is concerned, is that no small business remains small out of idealogical preference, but if it wants to grow, it must understand and deal with the operational and managerial implications of change. The form of any organization at any point in time is the result of the "laws" of growth up to that point, and if growth is to continue the new "laws" must be accomodated, shaped, and controlled.

Presented below are nine "crises" of business growth that arise during the growth cycles with some brief explanations in outline form. Some organizations will never get to or through them all, because they become stagnant at one level or another due to the inability to resolve su-cessfully a particular crisis or the lack of understanding, motivation, and management skills necessary for growth to continue. Also, of course, any one of these crises may re-occur at any time - a problem once resolved does not stay resolved forever, and not all organizations will experience them in identical order or only one at a time. For expository purposes, however, the ordering seems appropriate.

1. The Starting Crisis - usually caused by the lack of proper managerial experience in the line of endeavor being undertaken, by insufficient attention to accounting systems and information needed for decision-making, by understating capital needs and the time required for successful start-up, by underestimating costs, or all of the above.

2. The Cash Crisis - caused by poor cash management techniques and poor understanding of cash flows.

3. The Delegation Crisis - caused by the organization growing too large for one man to manage, and his resistance - psychologically, emotionally, or intellectually - to delegate. Delegation must occur not only in technical areas, but in management ones as well.

4. The Leadership Crisis - caused by the non-proportional growth characteristic of organizations, and the inability of the key man, or men, to learn and use a new set of skills and a new way of life. Old habits must be broken, motivation and morale problems change, planning and control must become more formalized, the required skills change, and management style must be adjusted.

5. The Finance Crisis - cuased by the inability of the organization to continue to finance growth by retained earnings or by capital supplied by the owner-managers. Heavy new debt, outside investment (private or public), or selling out are the usual alternatives.

6. The Prosperity Crisis - Caused by the operation of the often unaccepted fact that success always obsoletes the very behavior that created it. The organization may become complacent, relying on the same talents and people who got it where it is, while the environment in which it must operate is changing, or, it may tend to overrate its talents and embark on ill-structured expansion plans (in a sense, a return of the Starting Crisis).

7. The Management Succession Crisis - caused by the psychological resistance of the key man to hand over the reins. Stagnation and eventual decline are the result.

8. The Involvement Crisis - wherein the entrepreneur, after stepping down, is lost for direction, purpose, and meaning in life.

9. The Value Crisis - wherein he must face the difficult question of "why" did I do this, or should I do this. Perhaps this brings us full circle, in that this crisis must be resolved before the entire cyclical process can begin.

Listed below are ten strategies for overcoming these growth crises that are characteristic of entrepreneurial thinking.

1. Have a good business plan - understand the cash flows.
2. Know what makes the "bank" say yes.
3. Expand revenues by creative and agressive marketing techniques.
4. Exercise profit discipline by good cost, accounting, and financial controls.
5. Maintain proper personnel policies with emphasis on training and promotion on merit.
6. Consider growth without capital by licensing, franchising, or joint venturing.
7. Get objective, outside advice - listen!
8. Delegate - time is needed to plan and create growth
9. Make it happen - high risk strategy is to do nothing.
10. Be an entrepreneur.

But what is an entrepreneur? He is a gap filler, an opportunity creator. He is continually seeking a differential advantage for his product or service. He is an input-completer, in that he can identify all resources necessary to accomplish his plan, marshall them, and coordinate their application. Parenthetically, we note that highly trained professionals are usually not very good at this. The entrepreneur must make a major time committment to his project (not in hours per day, but in calendar tiem), for rarely does success come quickly. Again, the professional often avoids this, as his major committment is to his profession or career, not the project at hand. He is comfortable with risk - financial, career, family, and psychic - and is well aware of its consequences. It's not that he likes it or seeks it out, but he recongnizes it as a necessary evil and feels confident that by his actions he can reduce and control it. He is not a casino gambler. He has a high tolerance for ambiguity, and can function well in an organization and environment whose structures are continuously changing. As previously noted, he is committed to growth, and is willing to sacrifice short-term rewards for a vision of much greater rewards in the future.

As described, entrepreneurial thinking and managerial style clearly have a place in the big corporation or the government agency, and many such organizations are restructuring at least in part and developing new policies and procedures to encourage and promote them. While the environment and experience cannot and should not be identical, there is much that can be done to gain the not inconsiderable benefits obtainable. This section is concluded with a list of characteristics that private industry has found crucial for the success of new ventures and for the creation of an environment where entrepreneurial management can thrive.

1. Full support from the top.
2. A sense of direction - must be a "fit" with the organizations strengths and resources.
3. Clearly specified criteria for success (or lack thereof) fuzzy thinking about goals and lack of focus on profit and growth criteria must be avoided.
4. Patience
5. Marketing strength - the technical problems can usually be solved.
6. Competent personnel - entrepreneurial thinking, identified and motivated.
7. Flexible use of assistance from the organization - obtainable, but not with over-control.
8. Suitable organizational style - relative independence.
9. Appropriate reward structures.
10. Avoidance of fixed ideas - the willingness to abandon a loser when a project turns out to have been poorly conceived, evaluated or executed and to be flexible about the organizational future of a winner.

Such an approach can combine the best of both worlds - big business resources and entrepreneurial results.

Bibliography

There are many useful texts in these subject areas - a listing of particularly relevant ones by subject area follows:

Work simplification, methods engineering, and work measurement

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3) Mundel, M.E., Motion and Time Study - Principles and Practices, Prentice-Hall
4) Krick, E.V., Methods Engineering, Wiley
5) Hutchinson, J.G., Managing a Fair Days Work, Michigan

Human Engineering

1) McCormick, E.J., Human Engineering, McGraw-Hill

Value analysis and value engineering

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1) Duncan, A.J., Quality Control and Industrial Statistics, Irwin

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Queueing theory

1) Lee, A.M., Applied Queueing Theory, MacMillan

Forecasting

1) Chambers, J.C. Mullick, S.K., and Smith, D.D., An Executive's Guide to Forecasting, Wiley-Interscience

More general texts that cover many or all the above subjects, but in lesser detail, are:

1) Shore, B., Operations Management, McGraw-Hill

2) Johnson, R.A., Newell, W.T., and Vergin, R.C., Operations Management - A Systems Concept, Houghton-Mifflin

3) Levin, R.I., McLaughlin, C.P., Lamone, R.P., and Kottas, J.F., Production/Operations Management: Contemporary Policy for Managing Operating Systems, McGraw-Hill

4) Sutermeister, R.A., People and Productivity, McGraw-Hill

Many excellent cases in a wide variety of institutional settings are available in these various topics. A bibliography, with brief descriptions, is available from the Intercollegiate Case Clearing House, Soldiers Field, Boston, Mass. A good collection of such cases, in a wide variety of topics, is: Schrieber, A.N., Johnson, R.A., Meier, R.C., Newell, W.T., and Fischer, H.C., Cases in Manufacturing Management, McGraw-Hill.

Virtually every university or college computer center will have a library of appropriate programs useful in learning the methods and models discussed here. Computer manufacturers are another source. Learning this material - both theory and application - is greatly enhanced by the use of such programs, and is strongly recommended.

Three professional journals that regularly carry articles on these subjects are:

1) Industrial Engineering, The Journal of the American Institute of Industrial Engineers

2) Quality Progress, The Journal of the American Society for Quality Control

3) Management Science, The Journal of the Institute of Management Sciences

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PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN QUANTITATIVE METHODS

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THE CURRICULUM IN QUANTITATIVE METHODS

Faced with the challenges of adequately meeting requirements for social services today as well as preparing for the demands of tomorrow, welfare systems often seem overwhelmed. They appear to lag behind other systems in the use of modern management skills, depending rather on past approaches and solutions. Yet the problems of management in the delivery of social services are not so dissimilar to the problems of management in other sectors as to preclude the adaptation of modern management techniques to the welfare sector. To accomplish this will require not only an increased dissemination of information on modern tools of managerial analysis but the insertion into the welfare system of greater numbers of well-trained managers.

Training in quantitative methods is at the core of present day education for management. It provides the student with a scientific methodology for examining, analyzing, and solving complex problems. The end purpose is rational decision making. It is worth noting at the outset that training in quantitative methods does not imply exclusive preoccupation with mathematical formulae. It implies, rather, developing a systematic approach to the solution of problems in which mathematical and logical techniques play a role.

Given that training in quantitative methods is desireable for graduate students in social work, we are faced with the question of what the specific content of the curriculum might be. To approach this question one member of the management group presented in open session with the seminar participants some suggested topic areas. In part the intent was to determine which areas were generally familiar, and which generally unfamiliar, to social work faculty. Where the material was generally familiar, it was hoped that we could draw upon the collective experience of the group with respect to relevance of the material, how successfully it can be taught, and with what methods of instruction. The proposed curricular materials being put forth in this section of the report reflect that presentation and resulting discussion.

Before we discuss the program it might be appropriate to comment on some related experience we have had. Associated with Wharton, but taught by faculty of both the medical and management schools, is an M.B.A. program in health care administration. It has proven possible to use with this group of students the usual Wharton management core quantitative courses in systems analysis, operations research, and statistics. However, emphasis is placed on the application of methods for administrators who will be working in a human services, non-profit sector.

The essential elements of the educational program being proposed are:

1. Systems, Models, Optimization
2. Decision Theory
3. Cost-Effectiveness, Cost-Benefit Concepts
4. (Other Operations Research Techniques)
5. Probability
6. (Descriptive Statistics)
7. Statistical Inference

The sequence of topic areas 1. through 4. generally comes under the heading of operations research, although it is becoming more common to use the label, management science. Operations research developed over 30 years ago for military purposes, but was later (1950s) successfully adapted by industry, health services, and government. Briefly, operations research is the application of scientific methods and tools to problems involving the operations of a system so as to obtain optimum solutions. It attempts to treat any system as a totality, and emphasizes clear definitions of goals, and quantitative solutions to problems. The remaining topic areas (5. through 7.) fall under the heading of statistics. The subject matter of statistics is quite broad, extending from the planning and design of surveys and experiments, to the collection, analysis, presentation, and interpretation of data. It should be noted that there is not an absolute dichotomy between operations research and statistics. Decision theory could as well be placed in statistics, or treated as a separate field of study, and probability concepts are utilized in many operations research techniques.

The first topic area spells out the scientific approach to a problem which examines organizational relationships from a systems overview. Donald Schon provides a relevant example in his article, "The Blindness System."[1] The system is the totality of all individuals defined to be blind, plus the agencies that serve such persons, and involves the laws and policies under which services are provided. A basic principle is that a system should have well-defined goals, which would need to be developed in the present case. Once a problem has been defined, the basic approach is the scientific method. Its basic elements are:

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[1] Schon, Donald. "The Blindness System," The Public Interest, Winter, 1970.

1. development of the objectives of the decision to be made, and identification of the constraints under which the decision is to be made. For example, the objective might be stated:

(a) to maximize the number of services rendered, subject to a budgetary constraint. While this is a commonly stated objective, it can be seen that is treats services as the outputs of the system. As difficult as it may be to measure, one would prefer to identify the objectives in terms of true end-products, such as

(b) to maximize human functioning of the blind, subject to a budgetary constraint.

An alternative objective might be:

(c) to minimize the costs of service provided, subject to the maintenance of a satisfactory level of services.

2. consideration of alternative strategies and their consequences. Often these alternative courses of action can be represented by a mathematical model, and each act can be viewed as an alternative solution to the problem.

3. selection of the optimal solution; i.e., selection of that alternative solution which best meets the stated objectives. In some cases, particularly where the consequences of each act are well specified, this may be a relatively simple matter. In other cases, this last task may prove difficult because of undertainties in the outcomes.

Decision Theory

All managers are decision makers. Thus, some understanding of the theory of decision making is quite appropriate. Decision theory starts with a rather structured formulation of the concepts discussed above. That is, the decision maker is seen to have alternative courses of action available. The consequences of each act, termed payoffs, are than specified. There may, however, be more than one possible payoff for each course of action due to uncontrollable factors, termed states of the nature. This leads to a matrix formulation of the payoffs of each act under each state of nature. Decision theory provides criteria for making an optimal decision.

Three distinct decision situations are commonly recognized.

a. Decision making under certainty, where the decision maker knows with certainty what the state of nature will be, and thus knows the single payoff that will be the consequence of each act. The optimal decision is then made by identifying the best payoff.

b. Decision making under uncertainty - known probabilities, in which there are several possible payoffs for each course of action. However, the probability of any payoff is known. For example, the precise demand for services of a certain kind at a future time might not be known, but probabilities of different levels of demand can be assigned using historical data on past demand levels. In selecting the optimal strategy for dealing with this uncertain demand, one may use the criterion of maximizing the expected payoff.

c. Decision making under uncertainty - unknown probabilities, in which again there are a number of possible payoffs for each course of action, but the probabilities of each of these various outcomes is completely unknown. Decision criteria that may be used include maximin payoff, or minimax regret.

It can be recognized that in most of the problems dealt with by social services there may be difficulties encountered in specifying a measure for the payoff. However, apart from situations where profits are to be maximized, this is generally the case in decision problems. Measurements in terms of utilities provides one mechanism, but, in any regard, the decision maker is forced to think about quantifying the objectives. An inability to specify objectives, or to measure performance, only reinforces the argument that more structure is needed in the decision making process.

Cost-Effectiveness and Cost-Benefit Analysis

Program evaluation is one of the most important functions of managers in welfare systems and should receive dominant focus in educational programs. In evaluating projects, one may look at the relationship between the inputs and the output. With the cost-effectiveness approach, the inputs are priced although the output may not be. For example, in a Department of Health Education, and Welfare study, a number of proposed screening programs were considered. The output measure was lives saved, which DHEW estimated on the basis of certain assumptions about the effectiveness of the programs. The costs of each of the programs were then used to produce a cost per life saved measure. This showed the relative cost-effectiveness of each program, e.g.,

	Cost per life saved
Cervical-uterine cancer screening program	$3,470
Breast cancer screening program	7,663
Syphilis blood screening program	22,252

In general, one may consider several programs capable of producing the same output, and select that alternative with the least cost. Or, one may hold cost constant, and determine which of several programs yields the best output. As an example of the latter, a funding agency might consider the alternative outputs that could be obtained with an investment of $1 million.

Often, the cost-effectiveness approach forces the decision-maker to place emphasis on the incremental costs. For example, community planners, in considering fire protection systems of varying levels of sophistication, might relate annual costs of each system to the expected annual property loss. As the system cost increases, the expected annual property loss declines. To gain insight as to the optimal alternative, the planners could focus on the increment in cost of one level system to another as opposed to the decrease in property loss. Optimality is suggested when a level is reached such that the additional cost of a more sophisticated system would exceed the decrease in property loss. Of course, to introduce expected loss of life into the analysis would introduce a further dimension.

Underlying cost-benefit analysis is the concept of output in the form of a stream of returns, which have been valued. Thus, a given investment in a manpower training program may be seen to produce a stream of benefits to the trainees in the form of increased income over a period of years. The benefits can be discounted to the present and compared to the cost of the investment. This forms one criterion in evaluating the worthwhileness of the program, but as with cost-effectiveness, it can be viewed as providing a focus for the decision-maker, not necessarily an absolute rule. It is fair to observe that cost-benefit analysis is inherently a very powerful aid in decision-making, but it may also prove difficult to perform.

The first three topics of the quantitative methods curriculum have an added purpose in that the student is sensitized to the scientific method. Additional topics in operations research will be seen to follow a familiar approach. For this reason the list of elements in the educational program shows other operations research techniques in parentheses. In a short course there will probably not be time to pursue additional topics. However, if a full year is allocated to quantitative methods, additional topics, such as linear programming and queueing theory, can be added to the curriculum. Emphasis should be placed on having the student derive meaningful insights into the practical implications of these methods, rather than dwelling on technical algorithms or formula derivations. For example, even though the simplest queueing models may not be appropriate to many practical situations, the student will recognize the central importance of determining arrival rates and service rates in any waiting line proble

Probability and Statistics

Discussion of the proposed curriculum in quantitative methods indicated that many graduate students in social work presently receive training in statistics, either at the undergraduate or at the graduate level. However, often the students have had an introductory course that stressed purely descriptive techniques. There is a need to go beyond this to develop a full understanding of statistical inference. Such skills are needed to enable students to comprehend the professional literature, and, moreover, to design and conduct relatively simple experiments or surveys and to interpret the results of them.

Probability is listed as topic area (5), although this would presumably not represent its chronoligical order in the course. It should precede the decision theory discussion, for example. Managers face uncertainty in planning, in evaluation, and in decision-making. The probability-random variable model provides the means for addressing that uncertainty. Thus, the curriculum should cover fundamental probability rules, random variables, and probability distributions, and stress the Bayesian approach.

Students who have had previous courses in statistics can benefit from a review of probability, particularly since it is central to the methods of statistical inference. This would appear to be less the case for the components of descriptive statistics: empirical frequency distributions, averages, measures of variation, index numbers, and related material. It was for this reason that the topic area, descriptive statistics, appears in parentheses. In schools where graduate students of social work are familiar with descriptive statistics, the topic can be given little or no attention.

Recent years have seen a rapid development and widespread application of methods of statistical inference. Their contribution to knowledge gained through emphasizing careful design of experiments and detailed analysis of the results obtained cannot be overestimated. Two well-publicized examples can be cited. One was the field trials for the Salk polio vaccine and the other was the use of fluorine in public water supplies. The use of experimental and control groups is now standard research practice. Once students realize that the majority of researches are concerned with inferences about populations, the function and use of modern statistical methods become apparent. Indeed, in the social sciences, it is fair to say that statistical inference represents the major means for reaching valid conclusions. Thus, any modern curriculum in quantitative methods must provide a solid grounding in the elements of statistical inference; i.e., statistical estimation and tests of hypotheses.

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PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN INFORMATION SYSTEMS

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Information Systems

Graduate Schools of Management have implemented rather extensive requirements acquainting students with the technology, economics, and applications of computers. Social Work professionals, and certainly those focusing on administration, should also be aware of computer capabilities and limitations in preparation for work in the last quarter of the Twentieth Century.

The facts supporting this assertion are:

1. Computers can automate some information handling and information is the primary raw material of the management process.
2. Computer hardware and specialists already account for 2% of GNP, and more in information and paperwork-intensive industries and activities.
3. Computing has been and still is one of the fastest growing activities and new equipment and programs now enable smaller-scale users to tap this capability.

The curriculum focus should acquaint graduate students with computer capabilities. This might be done, at the minimum, as a quarter of a course in administration, as detailed below. Those specializing in administration should have a half to full course in the managerial uses of computers, also detailed below. Undergraduates need no formal computer training, although an introduction to computer terminal usage would be helpful.

Social Work Uses of Computers

(one quarter of a course in social work administration)

1. Reporting requirements of a representative social work agency.
   - sample reports
   - consideration of timeliness, accuracy, comprehensiveness, relevance, confidentiality.
   - file storage and updating in support of transaction processing and inquiry
2. Role of computers in information processing
   - Functions of data capture, conversion, storage, retrieval, processing, communication and display
   - Hardware components for the functions
   - Software requirements to guide hardware
   - Batch versus online processing methods
3. Computer specialists' roles
   - Role of systems analysts, programmers, data entry and computer operators.
   - Training , capabilities and compensation of these specialists.
4. Economics of Electronic Data Processing (EDP)
   - systems and programming development costs
   - hardware and operating costs and performance
   - batch versus online economics
   - cost and value of EDP services

Computers in Social Work Administration
(one half of a course for administration majors)

The quarter course described above would be augmented by the following topics (numbered to indicate sequence in the scheme above).

2. Role of computers in information processing
    - recent evoluation of computing systems
    - introduction to high-level languages
    - introduction to terminal interaction and very elementary programming
    - tour of computing facility
    - performance of major hardward components: Processor and memory, disks, tapes, readers, printers, terminals, communications.

3. Computer specialists' roles
    - sample systems analysis exercise - social work mini-case.

4. Economics of electronic data processing (EDP)
    - portion of total administrative budget for EDP
    - allocation of computing budget
    - economics of file processing and data base management

5. Management of EDP
    - organization of EDP department
    - staff selection, training, and evaluation
    - project management
    - data center operations procedures
    - future trends affecting EDP planning
    - EDP planning exercise - social work case

Pedagogical Methods

The mini courses proposed here should be taught with special attention to Social Work professionals' needs, educational background, and generally behavioral (rather than quantitative) orientation. Computers do not imply mathematics. Computers merely act as automated filing cabinets and typewriters in their storage and report preparation activities. Consequently, these courses need not emphasize computer science, quantitative techniques, or programming. Rather, emphasis should be on information needs, design of reports, requisite data collection techniques, data security and privacy, and cost/benefits.

Relevant readings and class explanation/discussion are the main recommended teaching method. However, terminals and printed reports should be provided with, hopefully, an annotated tour of a data center. In the half course for administrators, the case method can be used to stimulate student involvement and interaction. A short systems analysis case is recommended, followed by a case on EDP applications and requirements planning. Attached is an example of the latter type of case, "Midworth Memorial Hospital".

Comments on Selected Course Content

It must be recognized that students in the proposed courses will be users of computers and are not interested in becoming specialists. Furthermore, only those training for Administration are likely to have to design computer-based reporting systems or to have to oversee EDP activities. These assumptions have implications for the specific content to be taught under the course outlines cited above.

For example, topic 3 - Computer Specialists' Roles - should highlight the communication gap often observed between users and technicians. It should also point out that responsibility for ultimate results should rest with the user who then cannot point to the computer as a scapegoat.

As another example, topic 2's discussion of hardware functions and components should focus on alternative devices for each activity (e.g., input, memory, processing, transmission, storage, retrieval, printing, and visual display), their average performance levels, and their typical costs. Omitted are these devices's engineering design and their electrical and mechanical features. Small, full-function computer systems can be highlighted (e.g. IBM System 32).

Under topic 5, guidelines on average budget size and allocation should be stressed. Management of software development projects should be contrasted with using outside vendors of specialized services or "canned" programs. Personnel selection, organization, and ongoing performance measurement and training are also key issues. For comparison, the syllabus of a full course in "Introduction to Information Systems" taught to MBA's is attached.

Bibliography

In this fast changing field, printed matter can quickly become out of date. Periodicals, therefore, play an especially important role.

The major trade magazines are:

Datamation (monthly), Technical Publishing Company, 1301 South Grove Ave., Barrington, Il 60010

Computer Decisions (monthly)

Infosystems (monthly) Hitchcock Publishing Co., Hitchcock Bldg., Wheaton, Il 60187

Newspaper format publications are:

Computer World (weekly) and Computing *Newsletter* (daily)

Reading books of managerial interest are:

Computers and Management: In a Changing Society, Donald Sanders, McGraw Hill, 1974.

MIS: Management Dimensions, Coleman and Riley, Holden Day, 1973

Introductory texts on managerial uses of computers are:

Information Systems: Technology, Economics, Applications, Mader & Hagin, SRA, 1974

Computers and Society, Rothman, SRA, 1973

Management Information Systems, Davis, McGraw Hill, 1974

The most complete computer bibliography (1200 books from 1970 to 1975) is compiled and distributed by Professor Daniel Cougar, University of Colorado, Boulder, Colorado.

UNIVERSITY OF PENNSYLVANIA
The Wharton School

I. S. 200
INTRODUCTION TO INFORMATION SYSTEMS

Course Schedule

The objective of I.S. 200 is to provide a basic understanding of computer-based information systems in organizations. These facets of computerized systems are highlighted:

.Computer hardware and programs [illegible] provide the *technology* for information systems. The components and configurations of computer systems are explained and high-level languages are reviewed.

.Computer *economics* includes the costs and value of business applications. This entails a further understanding of file organization, processing costs, performance capabilities, and applications design.

.This technology and economics influence the development and management of *applications* within an organization. The realities of system selection, staffing, budgeting, and implementation are discussed and illustrated.

Course Text

Information Systems: Technology, Economics, Applications, by Chris Mader and Robert Hagin, SRA, 1974.

Suggested Reading (last half of course)

Computers and Management, by Donald Sanders, McGraw-Hill, 1974.

Course Format

Reading assignments parallel the Monday group meeting. The section meeting each week is a forum for assignments, questions, discussions, presentations and so forth.

During the semester three quizzes will be administered during the first half-hour of the group meetings of weeks 5, 8 and 13. They will cover the assigned materials through that point, as noted.

Two short programming problems and two team cases will be assigned. Case 1 involves systems analysis and design. Case 2 involves EDP planning in an organization. Teams will present their Case 2 solutions in the last section meeting. A critique of these solutions will be assigned in lieu of a course final examination.

Week	Date	Topic	Information Systems Reading Assignment (chapters)
1	Jan 15 (Wednesday)	Section meeting as scheduled	
2	Jan 20 (Monday)	INTRODUCTION	
		Computer usage and limitations	1, 2
		Elements of an information system	
		Surveys of computer development	
3	Jan 27	STORED PROGRAM COMPUTERS	
		Computer architecture	
		Data representation	
		Internal operation of a computer	3
4	Feb 3	SOFTWARE	
		(Problem 1 due in Section)	
		Computer instructions	
		Program execution	
		High-level languages	4, 5
5	Feb 10	COMPUTER SYSTEMS	
		Quiz 1 (chapters 1-5)	
		Hardware systems	
		Operating systems	6, 7
		Hierarchy of storage devices	
6	Feb 17	FILE PROCESSING	
		(Problem 2 due in section)	
		File organization and processing	
		Sequential vs. direct access	8, 9
7	Feb 24	ONLINE SYSTEMS	
		Indexed-sequential access	
		Data management systems	10,11
		Alternative configurations	
8	March 3	DATA OPERATIONS	
		Quiz 2 (chapters 6-11)	
		UNICOLL	12, 13
		Data entry	
		Data display	

Week	Date	Topic	Information Systems Reading Assignment (chapters)
9	March 10	SPRING VACATION	
10	March 17	APPLICATIONS	14, 15
		Time Sharing	
		Performance measurement	
		Systems analysis and design	
11	March 24	MANAGEMENT INFORMATION SYSTEMS	
		(Case 1 due in sections)	
		MIS concepts	16
		Software packages	(Suggested Readings)
12	March 31	MANAGING INFORMATION SYSTEMS	
		Project selection	
		Organizing and staffing	17
		Budgets	(Suggested Readings)
13	April 7	CASE DISCUSSION	
		Quiz 3 (chapters 12-17)	(Suggested Readings)
14	April 14	A LOOK AT THE FUTURE	
		Computer industry	
		Hardware and software	18
		Applications	(Suggested Readings)
15	April 21	ISSUES IN EDP	
		(case presentations due in sections)	(Suggested Readings)
16	April 28	CASE SUMMARY AND EVALUATION	
		Note: Sections will not meet this week due to the end of the semester on April 29.	

COURSES AND SCHEDULES

Information Systems can be used for either a semester or quarter schedule; two sample time allocations are shown on the next page. Different reader backgrounds, course objectives, available facilities, class and course durations, examination preferences, and teaching styles may lead to other schedules and content sequences. For example, Part IV deals with I/O activities and time sharing. Since these are often familiar to the student (especially following a programming experience) these topics might be read after Part I. (In sequence, the text provides an early "cold-bath" of CPU concepts as its approach, with the student then working from this fundamental understanding out toward other components of the system.)

Similarly, other readers may wish to skim Part II, which harbors the more technical concepts and details. Managers may be primarily interested in Parts III and V, which deal largely with computer economics and applications. The book is designed to support such flexibility in course planning. For those using the book in sequence, the following course schedules are recommended:

Recommended Course Sequence and Schedules

	Class hours or meetings per chapter	
	45 hrs/mtgs	32 hrs/mtgs
PART I THE ROLE OF COMPUTERS IN ORGANIZATIONS		
Chapter 1. Information Processing	2	2
Chapter 2. Survey of Computer Development	2	1
PART II HARDWARE AND SOFTWARE TECHNOLOGY		
Chapter 3. Stored-Program Computer Concepts	4	3
Chapter 4. Hardware and Software Interaction	2	2
Chapter 5. Programming in High-Level Languages	3	2
Chapter 6. Advanced Computer Systems Concepts	3	2
Chapter 7. Hierarchy of Storage Devices	2	2
PART III INFORMATION PROCESSING TECHNIQUES AND ECONOMICS		
Chapter 8. Sequential File Processing with Magnetic Tapes	2	1
Chapter 9. File Processing with Direct-Access Devices	3	2
Chapter 10. Data Management Systems	2	1
Chapter 11. Representative Processing Configurations	3	2
PART IV MAN-MACHINE INTERACTION		
Chapter 12. Data Entry and Error Control	2	2
Chapter 13. Data Display and Communication	2	1
Chapter 14. Time Sharing and Interactive Computing	3	2
PART V COMPUTER APPLICATIONS IN ORGANIZATIONS		
Chapter 15. Systems Analysis and Design	2	2
Chapter 16. Management Information Systems	3	2
Chapter 17. The Computer's Impact on Organizations	3	2
Chapter 18. The Computer Industry--Present and Future	2	1

PROPOSED SYLLABUS FOR A ONE SEMESTER COURSE IN THE MANAGEMENT OF PROFESSIONALS

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The Management of Professionals

by Francis W. Wolek

The purpose of this review is to summarize issues relevant to the management of professional personnel. The topics covered in this review are those which have concerned students of the general subject of administration. While no special attention has been given to materials which focus explicitly on social work professionals, the issues that have been chosen are those which are important to the management of social work. We assume that the reader is familiar with or may search the literature of social work for the papers with explicit reference to the social work profession (e.g., the papers by Green and Billingsley).

The Problem Solving Process

Much of the early attention given to the management of professionals concerned problems which many felt arose when executives tried to manage the work of professionals (e.g., Drucker and Shepard). Much of this early literature can be misleading and the demise of some parts of the literature can be confusing unless we view the problems dealt with within the framework of the process of managerial problem solving (e.g., Berlyne, Kepner and Tregoe, Stryker, and Wolek). According to the body of theory on this subject managers properly locate problems as departures of actual performance from specific standards of performance which are applicable to that organization at that point in time. Before the manager attempts to define the causes of a problem, he should specify the where, when, who, extent, and dynamics of this departure from standard.

To see how the above concepts help us with the management of professionals, let us refer to one of the key issues in the early literature: conflict between managers and professionals (e.g., Moore and Renck). First it is important to note that this literature rarely defined this so called conflict in terms of concrete standards of behavior. However, even more important, this literature failed to specify the problem. Where did the conflict show up? In all fields and types of professional work? By avoiding this question, many confused the dissatisfaction of the few professionals engaged in laboratory research with all professionals. When did the conflict arise? At all times and phases of work? By avoiding this question, many wrongly concluded that managers could not play constructive and sought for roles in professional work (e.g., Quinn notes that many research scientists feel insecure and unproductive in situations where management does not establish broad directions for professional work). By failing to ask this question of "when this conflict occurs?", many also read more into a temporary sellers market for professionals than man have been there. As the demand for professionals came more into balance with the supply of such personnel and then became less; the concern with the so called conflict of managers and professionals disappeared from the literature. Who did this conflict concern? All professionals and all managers? By avoiding this question, many confused the problems of young PhD's, newly entering organizational life, with the problems of professionals of all ages. As professional staffs ceased to grow so rapidly that they were dominated by new graduates, the conflict seemed to ebb. Even more importantly, the failure to ask the "who" question led many authors to believe that the dissatisfaction which professionals were free (given the demand/supply balance) to feel and express was unique to that group. More recent research (Davis and U.S. Department of Health, Education and Welfare) has shown that workers of all kinds, from blue collar and clerks on up, want the same characteristics of work (i.e., sense of responsibility, variety, opportunity for growth, personal control, etc.) which professionals stressed and felt were being stymied by management.

The point should now be clear: the problem of conflict between professionals and managers was never a singular problem. Instead it was always a mix of several different problems. Just as several different problems were involved so several different solutions were needed. In this light, the thrust of many early papers and books which attempted to sell the "flat" (i.e., minimum supervision) organization as a panacea for this conflict are indeed suspect. Indeed in many ways one wonders whether this conflict was real or just a convenient platform for advocating that society as a whole adopt academic values and structures which, at that time, seemed to be working well (see the works of Kornhauser, Marcson, Orth and Thompson).

Materials which have been useful in teaching students the essentials of the process of problem solving were referenced earlier (Kepner and Tregor, Stryker, and Wolek). While these materials do not explicitly deal with the social agency context, they have been successfully used in teaching the principles of problem solving to hundreds of agency executives. Once the structure of this process is understood, the instructor is well situated to apply it to the particular context of a social agency.

Relationships of Professionals to Others

As notes in the above section much of the concern with the management of professional personnel has centered on problems of relationships between professionals and others. The problems dealt with have ranged from communication failures, through difficulties in organizing cooperative work, to open conflict and dislike. In addition, however, the more recent literature has also emphasized forms of accomodation between professionals and others. The groups covered in this literature on relationships include managers, sub- or para-professionals, clients, and professionals in other disciplines.

As much of the above literature focuses on the professionals' perception of their rights and on expected patterns of professional behavior, most courses in this field begin with a coverage of theory from the sociology of professions. The introductory sections of Howard Vollmer and Donald Mills' book of readings on professionals offers a good selection of readings, generally used for this purpose. Such a theoretical preface is seen to be especially important in dealing with relationships between professionals and managers (Barber). For not only are the difficulties perceived to be anchored in differences about the conduct of work (e.g., differences in the value ascribed to a regular, 9 - 5 workday), but are even more importantly anchored in differences about the goals of work (e.g., "local" enhancement of the organization's vitality vs "cosmopolitan" enrichment of the accumulated body of professional knowledge) (see Gouldner) and norms about the conduct of work (e.g., professional reliance on peer authority vs managerial reliance on hierarchical authority) (see Kornhauser). As an earlier section of this review has already dealt with this issue of managerial-professional relationships, we shall only take this opportunity to note additional sources which should be useful to a student of this subject. The most commonly quoted reference on this conflict is the book of Kornhauser. A balanced view of this conflict, one which does not suffer from limitations noted earlier, should also include reference to the studies of Tagiuri (which slows less departure between managerial and professional values than is sometimes thought to exist), Pelz (which shows the positive effect of "involved" leaders and the negative effect of laissez-faire leaders), Glaser (which shows the high productivity associated with a combined local-cosmopolitan orientation), La Porte (which notes less strain and greater simularity of viewpoints between professionals and managers than expected), and Engel (which failed to find a negative correlation between professional productivity and bureaucratic structure).

Considerably less attention has been paid to relationships between professionals and persons other than managers; at least this is so for the general literature on administration. Given this state of affairs, the student of social work administation is likely to find a much richer body of literature in his own literature on conflicts between professionals and their clients. The main point to be made in this review is that social work is not alone in having concerns about barriers and aids to establishing a relationship of trusting cooperation and mutual respect between professionals and clients (see Chapter 6 of Vollmer and Mills for a selection of useful readings).

Relatively minor attention has also been given to problems which arise between professionals and para-professionals and between professionals in different fields. Both of these issues are important in social work where the use of paraprofessionals has been increasing and cooperation between such disciplines as social work and psychiatry is basic to several kinds of agencies. The paper by Evan which utilizes the sociological concept of "marginal role", discusses literature and experience on relationships between engineers and engineering technicians. Three case studies which have been of value in raising this issue with students and managers in executive workshops are the United Diesel, Braddock Company, and El Paso Electronics cases.

The literature on technicians was largely an outgrowth of concerns for how management might make more productive use of professionals by substituting technicians for them in less demanding tasks (see Torpey for a review of materials). The more recent shift toward greater supply than demand for engineers ans scientists has led to a decline in this literature on technicians. However, the increasing concern with the use of professionals in solving the problems of society (e.g., housing, transportation, pollution, etc.) has led to a new and growing interest in the problems of building interdisciplinary forms of cooperation. Interdisciplinary coordination has proved difficult to acquire and maintain (Shepard, Luszki, McEvoy, and Wilson). As yet, however, little theory has been developed to help us understand or resolve the issues in this area.

Professional Productivity

A significant concern in the literature on the management of professionals is that of the organizational conditions needed for high productivity in professional work. The most comprehensive work on this subject is the book by Pelz and Andrews which reports the results of a multi-year series of studies in R&D laboratories. Topics dealt with in these studies include such matters as the importance of: a) frequent and diverse communication, b) self reliance as a motivational factor, c) periodic rotation in program assignments, d) managerial coordination needed for work, and e) group cohesiveness in program staffs. In addition this book deals with some issues concerning how management may measure the productivity of its professional staffs. Other sources focusing on this subject of productivity measurement include Edwards and McCarrey, Harrold, Hodge, and Lippincott.

Much of the work done on relationships between managers and professionals which was referenced earlier also concerns the issue of motivating the professional employee. The feeling among some authorities was that high motivation would follow from a reduction in managerial control and a willingness to run the organization according to professional norms (e.g., Thompson and Burns and Stalker). In addition, however, it is worth noting that a significant part of the literature on motivational theory has been based on empirical studies of professional behavior (Maslow, Myers, and Herzberg). Other, more general studies of professional behavior in organizations also has a strong focus on the motivation question. In particular, examine the works of Barnes (on the social structure and productivity of engineering groups), Argyris (on the relationship of interpersonal relations and productivity), Dalton etal (on experimental changes in the organizational structure of R&D Laboratories), and Ritti (on the importance of underutilization of professionals to negative motivation). The classic study by Peter Blau of interpersonal relationships in an FBI office and also in a state unemployment agency are also relevant to this subject. Indeed portions of this book have been successfully used as case studies in classes on professional motivation and behavior. Another useful case study is that on Dallas Chemical which concerns a laboratory's adoption of the "dual-hierarchy" form of promotion (i.e., parallel lines for professional and managerial advancement). The article by Herbert Shepard on this technique makes a very useful supplement after class discussion of the case.

Since much professional work concerns the development of new ideas to handle new problems, there is much relevance in the large body of theory, empirical research, training methods, and psychometric instruments on creativity. This body of literature is truly large (e.g., the field even has its own journal) and we shall not attempt to summarize it in this review (see books by Crosby, Hinreichs, and Taylor and Barron). It is worth noting, however, that this material is generally more effective in class if the instructor allows the students both to test their own creativity by using some of the creativity-building techniques (e.g., Gordon's Synectics with its focus on active use of analogies and group creativity).

Professional Careers

A set of issues which have concerned many students of professionals in organizations deals with the development of professional careers. A good part of this literature is anchored in the sociology of occupations and focuses on such matters as why people choose specific professions for their careers and the characteristics of professionals in different fields (see the Vollmer and Mills book for a representative set of readings). This material is indeed interesting, but is probably best covered in courses on the History of Social Work.

Subjects dealing with careers which are directly relevant to management concern such matters as: a) socialization of new graduates into professional work, b) professional obsolescence, c) change from professional to managerial careers, and d) mid-career crises. Some material is available on the question of integrating new professionals into organizations (e.g., studies of Avery, Eichorn, and Hall and Lawler). Much more attention has been given to the question of professional obsolescence. This subject has been especially important in fast developing fields of technology such as electronics. However, the question of how professionals may maintain their understanding of the "cutting-edge" of professional knowledge is one which has relevance to all fields. There is a large body of literature on this subject ranging from definitions of the problem to outlines of programs for professional updating. The most useful summaries of work are the studies by Torpey, National Science Foundation, and American Society for Engineering Education. Two interesting papers, explicitly addressed to managers, are by Dalton and Thompson; and Rothman and Perucci.

A standard practice in selecting people for promotion to management positions in professional organizations is to select the person with the best record for professional work. This practice has led to much personal frustration by those selected and difficulty for their organizations. Generally such professionals have had no training in management and are given little or no help in understanding their new role and how they may best fill it. Many practitioners have also observed that the characteristics of a good manager (especially the stress on organizational skills) are often different from the characteristics of a good professional. In addition, this promotion practice deprives the organization of its best professionals. Despite the significance of these issues there has been little research on the selection of managers and the transition from professional to managerial careers. A case study which raises these issues, one which has been successfully used in training several hundred social agency executives, is the Industrial Chemicals "A" case. A very helpful discussion of this case by the casewriter is included in the book by Hower and Orth under the heading of "Specialty Chemicals--The William Hizer Case").

The "mid career crisis" is the final issue which we shall cover in this section. The behavior involved here occurs some ten years after professionals are into practice. At this point professional work may no longer be new and exciting and the individual may feel a challenge from new graduates trained in the latest thing. Furthermore, the individual may look at the sharply narrowing advancement opportunities ahead of him and realize that promotions and changes in job status will be slowing in the future. He may also fail to appreciate the tendency of many professional organizations to sharply specialize their older employees. Given this mix of perceptions, pressures, and phenomena many professionals have been found to undergo a difficult crisis of identity and personal satisfaction. A successful resolution of this crisis is essential if the individual is to continue as a productive person. Studies which have examined this issue, together with the related transition to management careers, are those of Sofer and Zaleznik, Dalton and Barnes.

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